First Copy

PUBLIC LIBRARY
JUN 20 1932
DETROIT

A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

Vol. 13. No. 1754 — Entered as second-class matter Aug. 27, 1925, Post Office, N. Y., N. Y., Under Act of March 3, 1879. — NEW YORK, SATURDAY, JUNE 18, 1932 — 5 Cents. $12 Per Year.

Low Priced Car Sales Hold Up Well, Detroit Reports; Dealers Are Not Stocking

Expected Rush by Retailers to Beat June 21 Tax by Buying Far in Advance Fails To Materialize

By CHRIS SINSABAUGH

Detroit, June 17.—Those who looked for a pick-up in production following the passage of the tax bill imposing such a tremendous burden on the automobile industry counted their chickens before they were hatched. There has been no evidence of dealers stocking up in anticipation of June 20, the dead line, when Uncle Sam starts his tax collection operations.

The industry is taking the black-eye and stands ready to co-operate to the limit with the government in collecting the taxes. Alfred Reeves, general manager and vice-president of the National Automobile Chamber of Commerce, has been here all week, working with the chamber's committee in ironing out the wrinkles and interpreting for the manufacturers the meaning of the bill. There will be no attempt made to dodge the taxes, Reeves says, and every effort is being made to play fair.

At this halfway mark in June, it may be said that production is holding up remarkably well in the low-priced group in which Chevrolet, Ford and Plymouth are carrying on their great three-handed fight for business and all doing nicely, thank you.

At this writing Chevrolet seems to be gradually tapering off in its productionu, as might be expected at this time of the year. Ford is going strong. But this writer still thinks Dearborn will not reach the 111,000 goal set for June when the month started. Plymouth is holding its usual pace.

Graham-Paige is taking a spurt because of the introduction of the new 1933 six. Right now there are about sixty-five of these sixes coming off the line each day, and it is expected that the 1,200 dealers will be stocked by July 10.

First shipments have been made of the $925 four-door sedan, but later on the two coupes and a convertible will start coming through.

In the low-priced field, too, sales are holding up remarkably well. In the case of Rockne, the mid-month count of deliveries shows June is running neck and neck with May and it looks as if June will exceed May. This is on top of the Rockne showing earlier, when April exceeded March by 105 per cent. and June beat May by 32 per cent.

S. A. E. MEETING CLOSES; TECHNICAL DISCUSSIONS LIVELY

White Sulphur Springs, W. Va., June 17.—The annual summer meeting wound up here yesterday to all intents and purposes with the exception of the research session, which is scheduled for Friday morning. Last night also was the night of the annual ball.

In looking back over the week, in spite of the fact that attendance this year was much below par it is to be considered very good in the light of current conditions. To this fact it may also be added that the technical sessions were much better attended in proportion to the number of members present, the material for discussion was of immediate interest to all engineers, who today are striving to make changes and improvements in cars to arouse greater buying interest on the part of the public.

A paper by B. J. Lemon of the United States Rubber Company, which was presented at the future development session covering the subject of "doughnut" tires, revived many of the questions that have been discussed here during the week relative to measures necessary to reduced front end disturbances at higher speeds. This question has been discussed from the chassis designers' point of view and was thrown back into that department yesterday to some extent by Mr. Lemon. Clyde Paton, in a paper on

(Continued on Page 3)

CHICAGO DEALERS ELECT DIRECTORS AND HEAR REPORTS

Chicago, June 17.—With no opposition ticket in the field, directors of the Chicago Automobile Trade Association were elected as follows at the annual dinner meeting Wednesday night in the Lake Shore Athletic Club: R. G. Tiffany, president of the association and general manager of the Cadillac branch; M. J. Lanahan, vice-president of Dashfell Motor Company, Dodge distributor; R. T. Hendrickson, treasurer of Hendrickson Motor Truck Company; K. C. Wettstone, general man-

(Continued on Page 2)

PRICES OF THE 1933 GRAHAM SIX

Body Type	F.O.B. Factory List Price	With Accessory Group No. 1	With Accessory Group No. 2
Coupe	$875	$945	$1,010
Coupe(r'bie seat).	925	995	1,060
4-door sedan	925	995	1,060
Convt. coupe	1,075	1,145	1,210

Accessory Group No. 1 includes bumpers, front and rear; one spare tire and tube; metal wheel and tire cover with chromium belt, spare wheel lock, twin horns and special engine with aluminum head.

Accessory Group No. 2 includes bumpers, front and rear; six demountable painted wood or wire wheels, side mountings with fender wells, two spare tires and tubes, two metal tire covers with chromium belts, two spare wheel locks, twin horns and special engine with aluminum head.

Optional Equipment — Safety plate glass throughout—$25 extra list on sedan, $17.50 extra list on coupes. Natural wood wheels—$10 extra list for five wheels; $12 extra list for six wheels.

CONGRESS STOPS ANOTHER LOOPHOLE IN ITS TAX LAW

Washington, June 17.—A loop hole in the tax bill through which large oil companies might have evaded the payment of $17,000,000 in gasoline and lubricating oil was effectively stopped by the Hose of Representatives today.

The House adopted a resolution imposing the tax upon any kind of company having title to 25,000 gallons or more of gasoline, or 1,000 gallons of lubricating oil held for sale at the time when the tax bill becomes effective on June 21. It will be necessary for the Senate to adopt this resolution before June 21 in order to complete the work of the House.

1933 Graham Six Has Two-Part, Aluminum-Iron Cylinder Head

New Five Point Mounting, Increased Horsepower, Automatic Clutch Among Features of New Line.

Detroit, June 17.—Graham-Paige is today announcing the brand new Graham six-cylinder line for 1933. This new series embodies a number of interesting features, including a new engine having a high compression composite aluminum and iron cylinder head at extra cost, designed to permit the use of ordinary fuels. A new type of rubber mounting is used in connection with the power plant. Clutch control is also fitted to provide automatic free wheeling.

The bodies fitted on this new chassis follow the lines of the eights. The fenders, of one-piece construction, have deep crowns and flanges that completely conceal all undercarriage parts, leaving only wheels and tires exposed to view. Heavy steel running boards are used. The front seat and the rear seat cushions are adjustable to give maximum comfort to driver and passengers.

Four body models are being offered on the 1933 six-cylinder chassis, as follows: Coupe, coupe with rumble seat, four door sedan and convertible coupe. The wheel base is 118 inches.

This new Graham six-cylinder engine is an L-head design with a bore and stroke of 3¼ by 4½ inches. This gives a piston displacement of 224 cubic inches. The brake horse power is given as 80 at 3,400 revolutions per minute.

The crank shaft is carried on seven 2½-inch bearings, with a surface area of 81.4 square inches. A Lanchester vibration dampener is fitted on the front end of the crank shaft back of the fan pulley, to neutralize torsional vibrations.

The lower section of the cylinder head, containing the combustion chambers, is made of aluminum alloy, and the top section, forming the top of the water gallery, is cast-iron. This construction is designed

(Continued on Page 8)

JOHN N. WILLYS HAS DEFINITE PLAN TO PUT W-O IN PROFIT

Toledo, June 17.—John N. Willys arrived in Toledo yesterday with a definite plan which he hopes will put the Willys Overland Company back on a substantial paying basis within the next year.

"I am no miracle man and I do not have the slightest thoughts of even attempting to perform a miracle," Mr. Willys declared. "However, I have given this gigantic problem much study and do have a definite plan which I honestly believe will carry the Willys Overland Company back to success and leadership in the automotive industry.

"If my plan can be accomplished in face of general conditions, it is not beyond possibility that Willys Overland will again be earning substantial profits within the next year. But this will not be accomplished without great effort.

"My first task will be to reacquaint myself with the industry, since I have been away from it for more than two years. My absence, however, I believe, has been a real education for me. This education has given me a broader perspective which will be of greater value in the rehabilitation of our industry."

Mr. Willys said he could not discuss in detail his definite plans and policies, but delcared one of his ob-

(Continued on Page 6)

TIRE COMPANIES BOOST PRICES TO MEET NEW TAXES

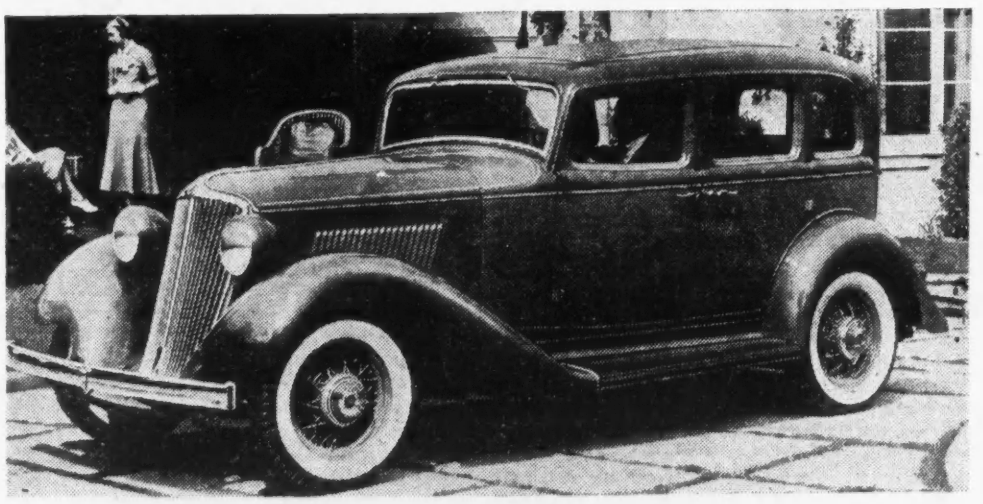
New York, June 17.—Initiating what the trade believes will be a general advance in tire prices, the United States Rubber Company and the Kelly-Springfield Tire Company yesterday announced upward revisions in both tires and tubes.

The new schedules to dealers, effective midnight, June 20, incorporate slightly more than the Federal taxes which will be in effect at that time. These are 2¼ cents per pound on casings and 4 cents per pound on inner tubes.

The United States Rubber and Kelly advances amount to 11 per cent. on casings and 15 per cent. on inner tubes and similar revisions will probably be made by manufacturers in the Akron, O., district. It was learned that the revised price lists were completed yesterday and sent immediately to printers.

It was indicated that the General Tire and Rubber Company would advance its schedule slightly in excess of the excise taxes on a pound-

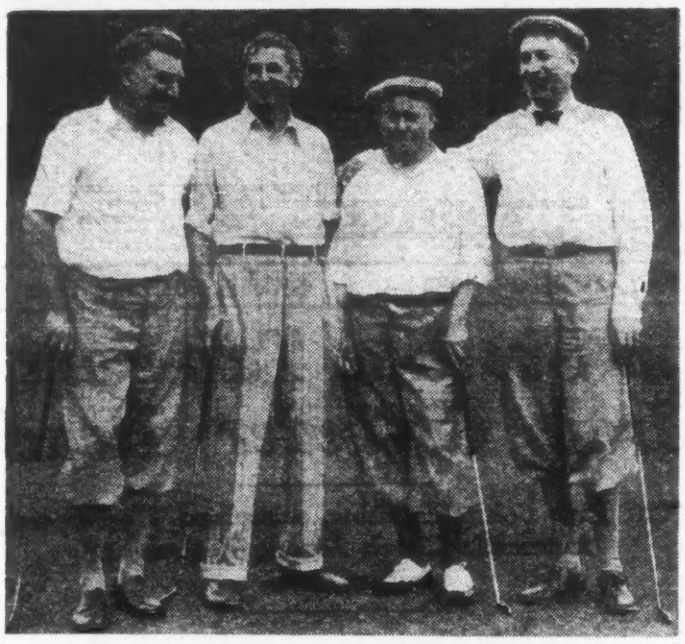
(Continued on Page 2)



1933 Graham Six Sedan

A. D. N. Letter Contest Rules Broadened—See Page 4

But Golf Goes on



A ROUND OF GOLF at the summer meeting of the Society of Automotive Engineers at White Sulphur Springs, W. Va., last week. The players are, left to right: T. C. Klug, Willard Storage Battery; J. C. Halblieb, Northeast Appliance Company; A. J. Scaife, White Company, president of the S. A. E., and A. A. Skinner, Leece-Neville

DODGE ANNOUNCES NEW COLOR COMBINATIONS FOR ITS TRUCK LINES

Detroit, Mich., June 17.—Dodge Brothers Corporation, truck division, today announced adoption of a new series of color combinations for Dodge trucks, offering a much wider range of colors and said to provide a more durable and satisfactory finish.

Coincident with the development of its new truck color codes Dodge announces that a new type of synthetic enamel replaces the use of lacquer in production finish of all truck models. With this material it is possible, Dodge truck officials claim, to obtain a more lustrous initial finish, which does not "chalk" or become dull, is easier to clean and maintains a more enduring surface glossiness.

The basic colors in the new Dodge truck code are as follows:

Suburban blue, on four-cylinder standard line trucks.

Ripley brown, a light brown or tan, on six-cylinder standard line trucks.

Shaw yellow, a bright, attractive shade, on two-ton heavy-duty trucks.

Twentieth century red on three-ton heavy-duty trucks.

Maroon, keltie green and Oakbrook brown all deep, rich colors on panel models, chosen particularly to provide distinctive appearance and a contrasting background for lettering and chromium plating.

Soudan brown, a dark chocolate brown to be used for wheels only in combination with Ripley brown bodies.

WIDRIG NOW HANDLES NEARLY ALL OF WISCONSIN FOR REO

Milwaukee, Wis., June 17.—Widrig Motors, for the past several year Reo distributor for southern Wisconsin district, has added approximately twenty counties in northern Wisconsin to its territory, making the firm Reo distributors for practically the entire state of Wisconsin.

LEASES LARGER QUARTERS

Hollywood, Cal., June 17.—Herbert R. Pulver, Dodge and Plymouth dealer, has moved into new and larger quarters at 1716-20 Cahuenga Boulevard, from his former location at 1734 Cahuenga Boulevard.

Classified Advertising

Classified Rates 5c Per Word

WANTED

SALESMEN and Dealers in all sections to sell 4 in 1 Auto Polish which cleans, polishes, waxes and protects. Rock bottom prices, protected territories. FOUR SQUARE LABORATORIES, BOX 202, WEST HARTFORD, CONN.

TIRE COMPANIES BOOST PRICES TO MEET NEW TAXES

(Continued from Page 1)

age basis. Officials of the company explained that the margin would be absorbed by other Federal levies which will increase manufacturing costs, such as postage, telegrams, telephons calls, bank checks and corporation income taxes.

The price advance forced upon the industry by the Federal taxes comes at a critical time, according to expressions in the rubber trade yesterday. The dealers will stand to benefit temporarily, as the taxes will be passed to the buyer regardless of the fact that shipments to dealers were ordered well in advance of the Federal levy.

So active has this sort of dealer buying grown that factory operations in the Akron district and elsewhere have been boosted close to capacity levels. The keenest imaginable state of competition exists between manufacturers and their own outlets on one hand, however, and the large mail order houses on the other, and the trade is inclined to look for a relaxation in tire and tube prices later.

No substantial upturn in tire consumption is expected by the industry this year, although a spurt in buying may take place before the taxes become effective. According to President James D. Tew of the B. F. Goodrich Company, the impending taxes have stimulated consumer buying where car owners actually were in need of new tire equipment.

"There is no reason, however, to anticipate any substantial increase in consumption of tires at this time," according to Mr. Tew, "as car mileage is generally based upon car registration and gasoline consumption, and both are now somewhat below 1931 levels."

MOTOR PRODUCTION ACTIVITY

By RAY B. PRESCOTT
Marketing Counselor

Production of low-priced cars continues to advance, and this has given the industry in general an upward movement. The advance is largely confined to Ford, Chevrolet and Plymouth, with Ford in the van.

On the other hand, higher-priced cars in the main have slowed down production, and it is doubtful whether Ford will be able to continue to increase his schedules and maintain his present levels during the latter half of the year, the purchasing power of the country having been so severely hit by the depression.

FINANCIAL NEWS

HARVESTER DIRECTORS

Chicago, June 17.—The directors of the International Harvester Company have elected James R. Leavell, president of the Continental Illinois Bank and Trust Company, a member of the board to succeed Arthur Reynolds, who had resigned on account of removal of his residence to California. The directors also elected John Stuart, president of the Quaker Oats Company, and William S. Elliott, general counsel of the Harvester company, as directors to fill vacancies that had existed since the deaths of Thomas D. Jones and Henry B. Utley.

BUDD WHEEL COMPANY

New York, June 17.—The board of directors of the Budd Wheel Company at a meeting held yesterday, declared the regular quarterly dividend of 1¾ per cent. on the preferred stock of the company, payable June 30, to holders of record June 27, 1932.

"This action is in recognition of the favorable condition of the company, which has enjoyed an increase in its sales each succeeding month of the current year," according to an announcement by company officials.

BASTIAN BLESSING

Chicago, June 17.—Stockholders of Bastian Blessing Company have approved the proposed plan for acquiring the Russ Soda Fountain Company through an exchange of securities.

Stockholders also voted to increase the membership of the board of directors to nine from seven, and C. J. Palmer was elected a director. The other director will be a representative of the present Russ interests and will be elected upon completion of the merger.

Russ stockholders will consider the plan on June 20.

AMERICAN AUSTIN

Butler, Pa., June 17.—The American Austin Car Company, Inc., has called a meeting of stockholders next Wednesday, to vote on a reduction of the authorized capital stock of no par from 1,000,000 to 500,000 shares. Outstanding stock will not be affected by the step.

CHICAGO DEALERS ELECT DIRECTORS AND HEAR REPORTS

(Continued from Page 1)

ager of the Packard branch, and George E. Sherman of George E. Sherman & Co., Ford dealer.

Messrs. Tiffany, Lanahan and Hendrickson were chosen to succeed themselves for three year terms and Messrs. Wettstone and Sherman were elected directors for one year.

In the annual report of Secretary George H. Bird, read by general manager A. C. Faeh, activities of the association for the past year were recounted in such fields as the combating of racketteering, confidence games, labor agitations and unfair legislative assaults against the automobile trade and industry, along with constructive work in placing men in jobs, aiding unemployment relief, co-operating with the annual automobile show and salon, enlisting aid of insurance companies in diverting wreck and other repair jobs to dealer service stations instead of back alley garages and legal and other forms of assistance to members.

In addition to clever entertainment numbers the program included talks by Col. Robert Isham Randolph on Chicago's 1933 century of progress World Fair with particular reference to traffic handling and the part to be played by the automotive industry through exhibits, and Alexander Karr of Chicago on the Qualities of Leadership.

BUTLER APPOINTED MANAGER FOR WILLYS IN FAR WEST

San Francisco, June 17 (UTPS).—R. L. (Bob) Butler is now northern California and Nevada manager for Willys-Overland, with headquarters with Bell & Boyd Company, San Francisco, northern California distributor for Willys-Overland and Willys-Knight. Butler is one of the veteran executives of the Willys-Overland organization.

SPARKS *from* DETROIT

Graham-Paige Tackles Time

* * *

Family Reunion

* * *

Prohibition Aids Car Makers?

* * *

Plymouth Board

* * *

Tire Mileage

Chris Sinsabaugh—Detroit Editor

ONE of the first two American manufacturers to adopt the doughnut tire as optional equipment, Graham-Paige is the first to announce a 1933 car. That's the big secret I was busting to spill yesterday, when I told you of riding in a next-year automobile.

The debutante is a six, a counterpart of the eight in the way of body and general features, but different in one or two details. for instance, the six carries an automatic clutch, which is a new Graham feature. Then there is a new composite aluminum two-piece cylinder head, with the lower section, containing the combustion chambers, made of aluminum alloy and the top section, which forms the top of the water gallery, cast-iron. This construction permits of a very high compression ratio without the necessity of using high compression or anti-knock fuel.

* * *

NONE OTHER than A. I. Philip took me for that ride, and the car we went in was the first of the new line to pass through the factory gates and take to the road, so I was in on a bit of history making. Graham has adapted that swanky body that contributed so much to the success of the eight to the six. Putting it on an 118-inch wheel base has not robbed it of the eye appeal it has on the eight; it looks as if it belongs. I would have been surprised if Graham had not carried this sensational feature over into 1933.

That ride out Joy Road was reminiscent of the same trip I took last fall in the Great Graham eight—the same roadability, the absence of sway swinging corners and the snappy engine response. Seventy, even seventy-five, and you felt as if you were just jogging along.

* * *

WE'RE A REUNITED family here in the Macfadden suite in the Fisher Building. Ray Ostell, representing Liberty, is convalescent after a pneumonia attack and is back part time, much to the joy of his colleague, Fred Ewald, Bud Wiley of True Story and the column conductor.

* * *

EVIDENTLY UNCLE SAM is not expecting the Eighteenth Amendment to be wiped out for several years, for he is buying a lot of new cars for the Prohibition Department. But he is hard-boiled about it; he has to be shown that the cars are all their makers claim they are, so the Bureau of Standards has been running a series of tests on the Indianapolis Speedway to find out. Seventy-five miles an hour for ten miles is required, and after the speed test the cars are torn down for a technical examination, to discover what that speed has done to the innards.

It is understood that fives makes of Detroit low-priced cars are being considered, but as yet no decision has been made as to the one make to be selected.

* * *

THERE HAS TO BE a first in everything, as with Graham-Paige in the rush to be the first to announce a 1933 model. In the case of the Plymouth $25,000 contest for the best fifty-word description of a floating power ride, the first entry to be received came from Tom W. Brown of Flint, Mich., whose letter was stamped No. 1 by the contest manager.

Plymouth has picked the judges for the contest, nominating Robert Ripley, the "Believe It or Not" cartoonist; Damon Runyon, Mr. Hearst's famous sports writer, and Barney Oldfield—"You Know Me" Barney.

* * *

THIS SAME BARNEY OLDFIELD seems to be horning in everywhere. He's been picked to do a Will Rogers in the Chrysler broadcast Sunday night. He'll talk for three minutes about Plymouth floating power.

* * *

UNITED STATES tire experts have discovered that the average automobile tire of today gives 50 per cent. more mileage than it did five years ago. The survey they made disclosed that the horse power of the average car has increased 80 per cent. and the weight 25 per cent., while a decrease of 20 per cent. has taken place in the size of the wheels. Despite this, the tires are giving 50 per cent. more mileage.

Retail Salesmen—This Is Your Page

This department is devoted to the interests of the retail sales division of the industry. Salesmen, this is your department. Automotive Daily News wants you to get something from this department that will help you in your work on the firing line. It wants you to pass on your own experiences, successes, failures to help your brother salesmen. Send in your story in the form of a letter, or even a postal card, and let us get it ready for publication. Your achievement or your mistake may help another salesman to make sales or avoid errors that cost you commissions.

Dealers read this page. Give us the benefit of your reactions on these problems that affect the work of your salesmen, the men on the firing line, the men who bring home the bacon or don't.

SELLING THE FAMILY

Edward C. Jordan, salesman extraordinary, and also in his day manufacturer, once made the remark: "Sell the woman and you've sold the car."

That is a mighty wholesome piece of advice for any automobile salesman to bear in mind all the time. The tendency of a new salesman is to concentrate on the obviously important father of the family, who will pay the bill and forget that the rest of the family has a mighty important part in making the selection.

When the expert in automotive salesmanship lists as one of the vitally important points that influence the buyer, "love of family," that is to say, buying a new car because the family wants it, he is stating a truth, but is not going quite far enough.

Not only does the American pater familias buy a car because his wife and his boys and girls want a new car and urge him to make the investment, but father is also influenced in his choice by the words of mother, son and daughter.

In an Eastern salesroom we recently met a salesman who has been making a remarkable record selling cars in the medium-price class in this tough year. We went there to interview him on his methods of working. This man was out when we arrived, but came back shortly—a snappy, neatly dressed "typical" salesman.

As he shook hands he remarked that he had been taking out Mr. Blank's 14-year-old son for a ride in his company's new convertible coupe.

"Isn't that rather a waste of time?" we asked, "the kid isn't going to buy a car, is he?"

The salesman smiled. "The kid isn't going to pay for a car," he corrected, "but he's going to have a whole lot to say about what car his father buys."

We had known all this theoretically, but here was the practical application. This salesman was making a record in drab 1932 and was working twelve and fourteen hours a day to do it. Yet he considered an investment of two hours or more in taking a 14-year-old boy out for a ride good salesmanship.

We wish we could add, "He made the sale," but, as a matter of fact, we have not checked up on that part of the affair. We hope he did. He deserved to, because he had shown a real understanding of a point in salesmanship that remains theory to altogether too many sellers.

The truth of the matter is that the American family is a close-knit unit. It is one of the best psychological factors in our national life. When the father of the family is going to do anything outside the actual realms of his own business, he usually consults all the other members of the family.

We have no actual figures (there probably are none in existence), but we would venture the guess that 90 per cent. of all purchases of cars are decided around the family council table, with every member of the family putting in his ten cents' worth.

The salesman who is really efficient and on his job will se not that the father the bill payer, is sold on his car, but the whole family. Many a time some 15-year-old boy or his 16-year-old sister can put in a word at the family council that will divert a sale from your pocket to some other salesman's.

We know one salesman who always makes it a point to say to the man interested in his car, "Can your wife join us in the demonstration?" And, if not, asks if he may call Mrs. Prospect and find out when it would be convenient for her to take a short drive, adding. "You know, Mr. Prospect, Mrs. Prospect will use the car almost as much as you will, and I wouldn't want you to buy anything with which she is not absolutely satisfied."

Another smart young salesman invariably asks his prospect if he knows that he is married and has children, if he cannot call for them and take them to school. He calls early enough to give the children a little ride on the way, and takes pains to point out the beauty and efficiency of the car on the way.

In dealing with the wife of a prospect, it is always well to remember that women, in common with most men, have a certain amount of vanity. They have no objection to bring seen by their friends in a glittering new car, even if they finally decide to drive the old one a bit longer.

And that brings us to a most important point. In selling the woman, always remember that style and beauty and newness mean more to her than they do to the man. The latter would probably drive an old car until it began to fall to pieces, if his gentle lady did not keep appealing to his "better nature." A woman wants style, and anything old does not seem stylish to her. A dress that a woman has had for two weeks is "this old thing," whereas father will wear a hat or a suit of clothes until the rag man begins casting speculative glances his way. It is lucky for automobile salesmen that women are a predominating influence in the sale and selection of new cars, because if it were left to the men, the average life of a car would not be between six and seven years, as the experts assure us it is, but ten or eleven years, and precious little money spent in servicing the outside appearance of the vehicles.

FORD AGAIN SECOND ON SALES LADDER, MAY RETURNS SHOW

New York, June 17.—Ford went back into second place among passenger cars in point of new car registrations in May, according to the indications provided in the retail sales return from the first twenty states to report for the month.

Chevrolet retained first place, with Plymouth, a Chrysler unit, ranking third, Pontiac, a General Motors car, fourth, and Buick fifth.

De Soto held sixth position in May, on the basis of the early returns, with Oldsmobile seventh and Dodge eighth. Chrysler was in ninth place on the sales ladder, with Essex occupying the tenth rung.

The next group of cars in point of sales ranked as follows: Nash, eleventh; Willys-Overland, twelfth; Rockne, thirteenth; Studebaker, fourteenth, and Graham, fifteenth.

Hudson stood sixteenth in point of registrations, with Hupmobile seventeenth and Packard eighteenth. Auburn was nineteenth and Cadillac twentieth.

Reo was twenty-first, heading the next group of five, with La Salle twenty-second; Lincoln, twenty-third; Willys-Knight, twenty-fourth, and Pierce-Arrow, twenty-fifth.

The other four cars carried in the Automotive Daily News registration tables ranked in the following order: De Vaux, Franklin, Marmon and Cord.

Ford increased its share of the total new passenger car business in May, taking 20.7 per cent. of the total registrations in the twenty states, the largest proportion of the total sales taken by that car in several months. The Chrysler group continued to take a record amount of the total sales, with 19.7 per cent. of the sales in the reporting states.

General Motors accounted for 45.3 per cent. of the total, somewhat less than in the earlier months of the year.

Hudson accounted for 2.8 per cent. of the total, and Studebaker cars took 3.5 per cent. of the total registrations.

S. A. E. MEETING CLOSES; TECHNICAL DISCUSSIONS LIVELY

(Continued from Page 1)

chassis design, presented earlier in the week, attributed much of this disturbance in the front end to torsional reactions and put forth the suggestion that increased unsprung weight in cars has its advantages to a certain extent. This, of course, is a direct reversal of trends followed generally for the past several years.

Another paper which created considerable discussion yesterday was "The Application of Aerodynamics to Present Day Motor Cars," which was presented by H. G. Winter of Briggs Manufacturing Company. This paper also aroused considerable discussion, and there is much opinion among engineers that the truly stream-lined car is still in the future and would not be acceptable to the public at the present time if such designs were presented. As pointed out by Bill Stout in his paper Sunday evening, the true stream line for a car would have to be turtle shaped in order to take care of wind actions from the side and quarter. The opinions regarding present streamlining indicate the designers have not gone far enough in treatment of the rear end of the car, while they have made good progress in the design of the front end.

A reduction of wind noises at high speeds has been to some extent accomplished by the new front end designs, but the real retarding effect of head winds is caused by the vacuum created behind the car, and until rear contours are further modified little actual results from streamlining are obtained above speeds of forty miles an hour. This vacuum force may be better understood when it is considered that the top area of an airplane wing actually does the lifting and not the bottom, as generally assumed. The contour of the low surface of the wing merely serves to build up the vacuum at the top.

Research sessions tomorrow morning will discuss journal bearing lubrication, gum in gasoline and the effect of humidity on engine performance.

Many of the members are taking leave of White Sulphur today, and it is expected that there will be a general exodus taking place tomorrow night.

SIEBELTS NEW ROCKNE, STUDEBAKER DEALER

Union City, N. J., June 17.—The North Hudson dealership for Studebaker and Rockne has been obtained by Max Siebelts Motor Sales, 4420 Hudson Boulevard, Union City. The concern was formed by Max Siebelts, who after eighteen years of experience in automotive mechanics and sales has established his own business. Albert B. Clayton is manager.

A complete motor service for Studebakers, Rocknes, Cadillac and La Salle cars and all other makes, is available at the service garage, 568 35th St., under Siebelts' personal service.

Clayton is one of the veteran automobile salesman of the county, and is well known in North Hudson.

INVENTORY RECORD SAVES TIME AND MONEY

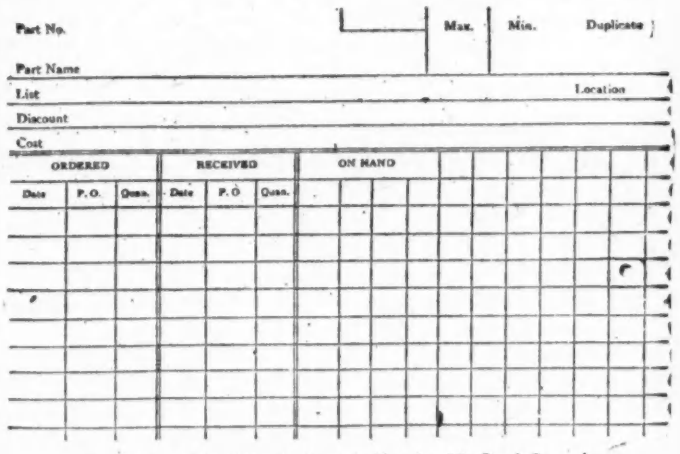
The following article is reprinted from Field Facts, the organ of the Automotive Electric Association. The suggestions made can be applied in so many lines that Automotive Daily News is passing the article on to its readers.

One of the easiest things to do in any line of business is to let the inventory pile up much faster than sales are made. The result is that the service station operator ties up capital in inventory that he should have for other purposes. Dollars, in the form of inventory, lie idly on the shelves and lose money for the business instead of making it, just the same as the pay roll loses money when there is not enough business coming in to keep all employees busy.

"I suppose we really should have a good inventory system, but it costs a lot in time and money to keep it up." It is this belief that results in inventories soaking up the working capital. The cost of carrying idle stock is much greater than the cost of keeping a record that would enable the service station operator to keep the inventory down to a reasonable amount.

A few months ago Parkhurst Auto Electric Company of Lincoln, Neb., devised and installed a new inventory system. J. W. Parkhurst says that the new system gives a true picture of the stock situation, and can be maintained without a great deal of expense.

In addition to showing the part number and part name, maximum and minimum quantities for each item, the card also shows the list price so that when invoices are checked on receipt of new merchandise any change in list price will be promptly noted. The location of the part in the bin should be indicated by a system of bin and section numbering.



Type of Card Used by Parkhurst in Keeping His Stock Records

Discounts to various classes of trade customers should be shown in order to prevent any price discrimination when billing.

The cost of the item should be shown, particularly if the cost is in any way affected by the quantity purchased. This is a constant reminder to the service company to take advantage of any quantity discounts, but at the same time the quantity purchased should be very closely checked against the rate of movement of the item.

In the three columns under the caption, "Ordered," the date on which the order is placed should be entered, the purchase order number and the quantity ordered. The same information should be entered in the three columns under the caption "Received." By checking the "Received" information against the "Ordered" information, the status of all transactions with the factory are kept in the clear, and any confusion arising from back orders or split shipments is avoided.

The list price is checked with factory invoices received and the customer's discount is checked on invoices issued to see that the customer gets the right discount for his classification.

The "Ordered" date and the "Received" date show the length of time it takes to receive merchandise from the source of supply. The time required for merchandise to move from the source of supply to the service station is most important in determining the amount to order.

The "On Hand" information tells the real story. In the first square should be noted the number of any given item in stock at the time the system is started. From that time on it is simply a question of subtracting when sales are made and adding when new stock is received. This record shows immediately how many have been sold between one "Received" date and the next "Received" date. This information shows how fast the item is moving, what the minimum quantity should be, what the maximum quantity should be and how many should be ordered. As this rate of movement slows up or increases, the minimum and maximum amounts should be adjusted accordingly.

Profits can be made on the sale of service merchandise only so long as the cars for which the parts were originally designed are actively in the service market. During the first year of the life of a car, the parts inventory for that particular car can be kept reasonably low. The sales of service parts will begin to increase during the second year, and will still further increase during the third year of life of the car. These are the years in which to watch the increasing inventory with great care in order to avoid a slow-moving or possibly even an obsolete stock when any given car model begins to pass out of the active service market.

The size of the business has a great deal to do with the amount of any kind of information which it is advisable to record. The form illustrated provides quite complete information, and it would be quite easy for any service station manager to simplify this card down to the minimum of information which would be necessary to protect him against obsolescence and tying up too much capital in his inventory.

JOLLY HEADS SERVICE UNIT OF ROY WILMETH COMPANY

Indianapolis, Ind., June 17.—Appointment of George M. Jolly as service superintendent of the Roy Wilmeth Company, largest Ford dealer of the state of Indiana, is announced by C. T. Foxworthy, general manager. Jolly, who has recently served in that capacity with another dealer, was previously with the Wilmeth company for six years.

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

Published Every Day Except Sunday and Monday by
AUTOMOTIVE DAILY NEWS PUBLISHING CORPORATION
350 Hudson St., New York, N. Y.
D. J. Elder, President. H. A. Tarantous, Vice-President. Alexander Johnston, Secretary
Entered as second-class matter August 27, 1925, at the post office at New York, N. Y., under the Act of March 3, 1879.
350 Hudson St., New York, N. Y. Telephone CAnal 6-1000

MEMBER A. B. C.

Mail subscriptions to CIRCULATION DEPARTMENT 1926 Broadway. Telephone TR afalgar 7-4500

Subscription Rates. One year, $12.00; two years, $20.00 for United States and Canada also Mexico, Cuba and Panama
To Other Countries, One Year, $15.00; two years, $26.00. Single copies 5 cents.

SATURDAY, JUNE 18, 1932

ADVERTISING AND BUSINESS HEADQUARTERS

Harry A. Tarantous, Business Manager, 350 Hudson St., New York, N. Y. George M. Slocum, Manager Detroit Bureau, 427 Fisher Building, Detroit, Mich., phone Trinity 2-3500. Willard R. Cotton, Western Manager, 333 North Michigan Ave., Chicago, Ill., phone Andover 2400. Metz B. Hayes, New England Manager, Little Building, Boston, Mass. Blanchard, Nichols & Coleman, American National Bank Building, San Francisco, Cal.; Lincoln Building, Los Angeles, Cal.; 1037 Henry Building, Seattle, Wash.
Address ALL Advertising and business correspondence to 350 Hudson St., New York city

EDITORIAL DEPARTMENT

350 Hudson St., New York, N. Y. Telephone CAnal 6-1000.
Alexander Johnston, Editor. William C. Callahan, News Editor
Statistical Department (registrations and specifications), P. J. Robas, statistician. Engineering Department, A. Benson Carleton, technical editor. Merchandising Department, Charles S. Zack, editor. Art Department, John Bauerfeld, director.
Detroit Bureau, Chris Sinsabaugh, editor, 427-8 Fisher Building, Detroit, Mich. Telephone Trinity 2-3500. Contributing editor, John C. Wetmore.

Our Gold

WHETHER the gold standard is a blessing or a curse is somewhat of a moot question. Probably the weight of opinion among economists holds that gold is the one satisfactory basis for the finances of any country.

If we accept the gold standard as a satisfactory, and, in the long run, the safest, foundation on which to base our national economic life, we have cause for congratulating ourselves at the present time.

During the past year foreign nations, particularly France, have made a definite attack on our stock of gold, which amounts to about a third of the total quantity in the world at the present time. The Bank of France has gradually drawn gold away from us until in the past year we have sent abroad probably a billion dollars' worth of the yellow metal.

But now the Bank of France has just about exhausted its American deposits. Its ability to draw more gold from us has nearly reached the end. This drain will stop and the finish finds us still sitting on the greatest pile of gold of any country in the world, even France falling far behind our total. Our gold reserve is just about as large as it was during the late fantastic boom.

Financiers generally believe that the next important flow of gold will reverse recent months in being into the United States Treasury instead of out of it. Furthermore, they hold that the value of the American dollar, which has resisted all attacks upon it, will substantially increase when any real symptoms of revival are to be noted. This will mean that investors in foreign countries will again come into the market for American stocks and bonds.

In the meantime we sit tight on our pile of golden assurance of ability to pay.

Ford's Challenge

IN THIS day when mass production has been halted in its triumphant course, when the machinery that makes such intensive output possible is looked upon askance by many people, it is a wholesome tonic to read Henry Ford's recent statement in a paid advertisement.

Mr. Ford has not lost faith in the ultimate beneficence of the machine. He expects to find not less machinery in the future but more. He lauds the machine's contribution to modern life as having enabled every one to enjoy inexpensively the comforts and conveniences that we today consider necessities.

He asked rightly enough if we should declare a moratorium on machinery: "Are we to declare that 1932 is the date at which development is to cease and the world be stabilized just as it is? It cannot be done. Life would burst through any barrier we might raise against its ongoing. Our times are primitive. True progress is yet to come. The industrial age has scarcely dawned yet. We are pioneers and pioneering has its hardships."

In good truth we are enduring now the growing pains of the new industrial age. The genius of our machine inventors and designers has outstripped the momentary ability of our people to consume the volume of products they are able to give us. Our manufacturing organizations have overbuilt their plants. They have outstripped the momentary consumptive ability of the country.

Gradually the American people will get back to normal buying. Unemployment will be absorbed. People will draw wages again and will begin to spend them. Our population increases at the rate of some three per cent. a year. Stocks of all necessities are at a low ebb. With the slightest sign of revival Americans will begin to buy again and the reflection in business back through the retail division to the wholesalers and the manufacturers to the suppliers of raw materials will be almost instantaneous.

We shall take up the slack which mass production, overexpansion of plants and ingenious machinery have caused, and we will go forward to new prosperity on a scale never before achieved.

WHERE DO WE GO FROM HERE

By F. S. SPRING
Hudson Motor Car Company, Detroit
(THIRD INSTALLMENT)

Arthur Brisbane, whose pen is ever young, challenges his readers over and over again with the statement that whatever a man can imagine that he can do.

The youth of the country are imagining; they are imagining motorcars not patterned on the hackneyed carriage outline, they are dreaming of cars built safe for modern speeds, with bodies and chassis integral like Pullman cars. They are dreaming of cars of new and lighter metal so strong and light that but a fraction of the present horsepower and fuel will be needed to carry them incredible distances at a fraction of today's cost and time. They are dreaming of cars so scientifically streamlined that millions of gallons of gasoline will be saved annually in the fuel bills of these fast-traveling motorized bullets.

Do not be shocked; they are dreaming even of cars with wings that can take to the air at the whim of the driver, the truly practical equipage of the future, the aero-car, half plane and half vehicle. Who knows that we may not live to see the day of transatlantic aero-car travel? The pioneers of our business once were thought just as crazy. What a man can imagine that he can do.

But, getting back to earth, do not overlook the writing on the wall, in the adolescent hands of the boys and girls who in a year or two will be your customers and upon whose patronage you must of necessity depend if you are to survive. Unless we read aright what is going on in these changing times and keep well out ahead, the automobile industry may well have seen its best days and be replaced by a new form of transportation that will better serve the needs and whims of the next decade.

As I see the situation in which not only we as engineers but our entire splendid industry finds itself today, we need to face the fact of youth and its manifestations much more squarely than we have done. For the support of our industry, we must consider these younger people for their influence on buying; we must regard them as tomorrow's buying power, great or little as it is destined to be. Most serious of all, we must see in them our own projection on the future's screen, and, if the portrayal is to be favorable to use, shape our works to their demands.

To adapt itself to the ebb and flow of the cyclic, cataclysmic changes to which our country's and our world's business affairs are subject, our industry might better set its course for normal times instead of organizing only to ride the flood. That might even involve turning away some orders in a time of boom—what a heretical thought for any American business man to entertain—but it would also mean an even keel, a more serene mind and a fuller dinner pail in the less flamboyant times.

There is another steadying quality to which our industrial policy might well address itself. Let us return for a moment to our imaginary ideal organization; and let us resolve that, when we have decided upon a niche which we and our ideals and our product might serviceably and profitably occupy, in that niche we will stay, and no ideas of expanded plants or swollen markets shall prevail on us to leave it. Too many organizations switch around, now this way, now that, as they think the winds of demand are veering. Have you seen any such make a conspicuous success?

In our own niche, then, and by our own lights let us plan and build and work, in the confidence that, if what we do is really well done and valuable, it will receive its meed of appreciation.

I feel now as though I had asked you to accompany me on an excursion that has touched at too many points, gone off in too many directions, whereas I meant it to go only into the future of our own particular art and science. Conclusions? Well, if any may be in order they are these:

Our future is with youth. We must have change, lest we stagnate and die. We must change constantly; we are actually in process of change this very moment, but we must not make too radical changes, either in our organization for design or for manufacture or for distribution. Any system however strong is weakened by an attempt to assimilate too much foreign matter too suddenly. By the same token avoid radical advances in style; when they are suddenly sponsored by a manufacturer whose product has assumed rather a definite form in the public mind, they are so suddenly different as sometimes to be comic. Happy the organization that begins with an advanced design, for then it can step forward rhythmically to repeated applause. Above all, prize new thought, new blood and new courage in your organization and in yourself, for if we are going somewhere, if we are to go anywhere, our future is to be all new.

JUDGING SUPER-BALLOON TIRES

B. J. Lemon, field engineer of the tire development department of the United States Rubber Company, read an extremely interesting paper at the technical session of the Society of Automotive Engineers on the new super-balloon tires. While space lacks to publish the entire paper, the following summary gives Mr. Lemon's views on this new development in the art of tire design and construction:

Until order is restored out of the present chaos, no clear definition of a super-balloon tire is possible. Original equipment tires now include six sections, from 5.25-inch to 7.50-inch. Super-balloons are proposed in seven sections, from 6.00-inch to 9.75-inch. Assuming that the 6.00-inch super-balloon is intended for future light cars, possible direct size for size substitutions of the present and proposed tires are shown in Table 1. This set-up gives a clue to the relationship of a present balloon tire to the proposed super-balloons. The proposed tires are triple oversize sections on smaller diameter wheels.

Proposed experimental sizes of super-balloon tires, including nominal sections, rim widths, actual section widths and tire standing heights, are shown in Table 2.

Unfortunately for our triple-oversize tire definition, a size-for-size replacement is not practicable on all present cars. Cars using 7.00-in. and 7.50-in. balloon tires generally have 15-in. brake drums, which need 17-in. rims for satisfactory clearance. Therefore, the 9.00-16 and 9.75-16-in. supers, if used on a 16-in. diameter wheel, will require brake-diameter changes. Because of their height and width, these two sections cannot replace present tires on 17-in. wheels without some fender, body or probably steering hook-up changes and without a possible sacrifice in tire appearance.

Still further confusion is thrown into the table and definition by present field replacement practice. Tiremakers began supplying a 9-in. super-balloon for Chevrolets, Fords and Plymouths. This is a septuple overside for the 5.25-in. standard balloon. Saner ideas prevailed and we dropped to the 7.50-in. super—a quintuple oversize. Real conservation asserted itself when the 6.50-in. super, a triple oversize, was offered for field replacement.

Fortunately for our super-balloon tire set-up, car engineers have kept extreme oversizing quite well in check. Graham-Paige chose the 7.50-in., a triple oversize, and the De Soto and Rockne are offered with quadruple oversizes.

Merely selecting a certain oversize by no means gives a large-section tire a super-ballooning ride effect unless low enough pressures are used to compensate in cushioning for the increased tire size.

* * *

CAR APPEARANCE

Increase in car speeds, requiring more stability and lower center of gravity of the car, has gradually reduced wheel diameters from twenty-three inches to seventeen inches, the increase in tire sections compensating for only about one-third of this axle drop. Body lines, with sweeping fenders to accentuate the speed aspect, have not been affected seriously by the heretofore comparatively small increases in tire sections. Today cars are so close to the low limit of road clearance that further wheel-diameter reduction must be offset largely by correspondingly larger tire sections, such as those of the triple oversize super-balloons, which rather radically change the appearance of the car and tend to increase the stability but to decrease the speed aspect.

* * *

The rolling resistance of super-balloons, as measured by deceleration, maximum speed and the gasoline economy, appears to be slightly greater for the larger tires than for standard balloons. A series of tests on a light car gave the following deceleration results:

Time required to coast from thirty to twenty miles per hour with standard 5.25-18 four-ply tires inflated to 32 pounds, 14.9 seconds. The same car, with 7.50-15 four-ply super-balloon tires inflated to 20,

(Continued on Page 6)

A. D. N. Offers Dealers $100 for Letter

This Newspaper Will Pay $100 for Best Letter of Month, $5 for Best Letter Each Day. Read Offer Below

IT has been decided to broaden a little the rules of the prize contest which Automotive Daily News is now running. Instead of offering prizes for letters from dealers who are doing more business than they did last year, we now include all dealers, even though they may not be exceeding the profits they earned in 1931.

Therefore, Automotive Daily News offers a monthly prize of $100 for the best letter from any dealer, telling how he has managed to keep his business out of the red this year, or giving the most constructive idea on how to increase profits, even though his own business may not be exceeding that of 1931. The plan is to pass on to other dealers methods, systems or ideas that will help them get more out of this reluctant market. The editors of Automotive Daily News will be the judges of which letter is best, and prizes will be awarded by them, their judgment being final.

Furthermore, Automotive Daily News will publish every day the best letter received that day and will pay the dealer writing it $5.

Get busy, you dealers, and grab yourselves $100 or a consolation $5, by passing on to your fellows the recipe that is enabling you to make money in a tough year.

BRAKE LINING PROBLEMS

By CHRIS BOCKIUS
Raybestos-Manhattan, Inc.

As an introduction, a historical sketch may not be out of place in order to bring out the reasons for the present conditions confronting the producer of brake linings for use in brakes for pleasure cars. It is also considered entirely consistent and pertinent to include brake drum materials, as they cannot help but be associated intimately with problems of the brake lining manufacturers.

For some years past it was the general practice in this country to use the low carbon pressed steel brake drum exclusively both for passenger cars and commercial vehicles. The service rendered by the steel drum was fairly satisfactory until the increasing service requirements of brakes required better design brakes. The brake lining manufacturer was able to meet those increasing conditions from time to time, until finally, several years ago, the service requirements of heavy commercial vehicles became such that both brake linings and pressed steel drums could not meet the increased service demands. In this field, the cost of pressed steel drums was relatively high. When it became necessary to replace drums after a very few miles of service, attention was turned to other types of brake drums to obtain better service performance. A high grade of cast iron drums was found to give appreciably better performance and life. The brake linings in existence at that time were primarily designed for use with steel drums, but, with some minor changes, were made to perform satisfactorily with this new type drum. The frictional characterists of these linings were distinctly on the low side, and the use of power or booster brake operation was added in order to provide ease of brake operation.

The commercial vehicle designers were more interested in drum performance than in any other factor, therefore their drum designs were heavy and rather expensive. This type of drum was not directly applicable to the pleasure car field, where weight and cost are important factors, but the fact that the use of cast iron brake drums in heavy commercial vehicles showed such improved service finally led to the adoption of this type of drum for heavy passenger cars, with some reduction in weight, but still at a comparatively high cost.

In the last few years the average car speeds have materially increased, and, with free wheeling, the limit of expected performance of brake lining with the pressed steel brake drum had been reached for all except the light cars. The brake-drum manufacturers recognized that the industry really required an inexpensive brake drum which would withstand service conditions better than the low-carbon, pressed steel drum. Thus started the development of what may be termed "composito" brake drums, consisting of cast-iron-faced or inexpensive designs of high-carbon-steel-faced drums.

Mention should also be made of the distinct increase in recent years of the unit pressures employed to obtain better brake performance. These increases in pressures were also productive of further scoring trouble and apparently hastened the necessity for attention to be centered upon different brake drum materials. Cast-iron or alloys of iron unquestionably give smoother brake performance over a wider range of service conditions and permit the use of higher unit pressures. This may be due to the fact that iron has not the dry surface characteristics of steel and may be said to carry some degree of inherent lubrication. The frictional qualities of the iron-surfaced brake drum are appreciably lower than those of steel. In this connection it should be mentioned that high-carbon steel surfaces may be roughly classified as showing the same degree of friction as cast-iron, but do not have the inherent lubrication of the cast-iron.

The use of steel brake drums is limited, apparently, to brake linings carrying a relatively high degree of what may be generally termed organic material. It might be said that some mild form of lubrication became imperative to avoid the ills of scoring and noisy brake operation. The proper amount of organic material was found to be rather difficult to balance for all degrees of service. Under some service conditions the operation of the brake became greatly less effective, due to the accumulation of organic material on the surface of the lining and possibly contamination of the surface of the brake drums, which has been designated as "service fade-out" or "hardening of the arteries." Under other service conditions, such as long, mountainous grades or frequent high-speed stops, the brake performance would become appreciably less effective or be lost entirely, which has been termed "fade-out." Linings designed to eliminate these conditions brought in another condition which was much worse from a car owner's viewpoint: badly scored or grooved drums, necessitating replacement of brake drums, in addition to renewing the brake lining, all of which was expensive, and resulted in a new form of noise which might be termed as "car owner's squeaks."

The foregoing statements are apparently very simple in themselves, but present an entirely new set of problems to brake-lining manufacturers, for, naturally, the same degree of braking effect or an improvement is desired when the change is made to cast iron-faced drums. Linings containing the proper degree of lubricating effect for steel are in the main unsatisfactory for use with cast iron. It also naturally follows that the fund of knowledge built up by brake-lining manufacturers regarding the action of various ingredients which may be incorporated into the several types of brake linings as applied to steel must be entirely reconstructed. Thus, the brake-lining manufacturers must embark upon an entirely new line of research to determine what is best suited for the iron-surfaced drum. Some lining manufacturers have information at hand derived from industrial and commercial vehicle applications using cast-iron drums. Yet the passenger car field may be said to present its own particular problems, and little of the aforementioned knowledge at hand can be used without carefully checking, as the industrial requirements are not strictly parallel to those of this field. The new task placed upon the brake-lining industry does not seem difficult to those uninitiated in the art. Frankly, it places a very heavy burden of research upon the laboratories of the brake-lining manufacturers. The cast-iron drum is still in progress of development and renders present brake-lining research somewhat involved, as the character of the iron surface has not become standardized. In this connection, it should be pointed out that there is an excellent spirit of co-operation among the brake-drum manufacturers toward the brake-lining industry. Thus, it is very likely and essential that some standards for the properties of drum surfaces may be agreed upon by both industries.

There were only two general types of lining several years ago—namely, woven fabric and folded-compressed fabric, which were both practically eliminated in passenger car production from all except the lighter cars by molded or pulp-type lining. The principal reasons for the change were noisy or squealing operation, erratic frictional characteristics, due to varying surface conditions of drum and linings and sensitivity to moisture. All of this came about with the steel brake drum, and unquestionably the pulp linings were better suited to and gave a rather uniform performance in general with this drum, bearing in mind the difficulties mentioned above. The pulp-type lining is at the present time carrying through on the cast-iron drum. Nevertheless, it should be pointed out that the development of fabric materials has been in progress for several

(Continued on Page 8)

ROCKNE SIX
SPONSORED AND GUARANTEED BY STUDEBAKER

May deliveries increase 32.7% *over April*

IN some points, Rockne is in first place in retail sales! In other points is second, third and fourth!

Every month sees the swing to Rockne become more pronounced. Deliveries in the last ten days of May were particularly impressive, showing a gain of 42.3% over the same period in April! People want the style, the speed, the stamina of this sensation car of 1932.

The Rockne is going over for two reasons: (1) it's backed by Studebaker with all of Studebaker's 80 years of authority and responsibility; (2) its the outstanding example of *value giving* and *real quality* in the low-priced field today.

Why not put yourself in the way of making *real money right now* by putting in your application for the Rockne representation in your community?

The Rockne is marketed through dealers only . . . and that means there is plenty of good territory available everywhere—even in large cities.

The Rockne franchise is the fairest in the industry. Write or wire for full details today.

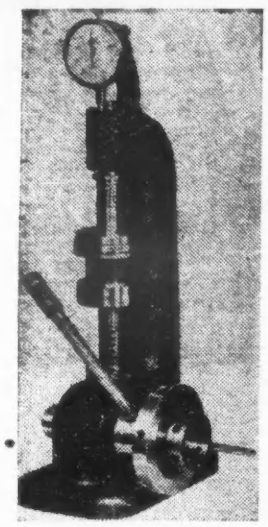
$585 AND UP, AT THE FACTORY

ROCKNE MOTORS CORPORATION
(A Studebaker subsidiary company)
DETROIT, MICHIGAN

Closed bodies wired for radio.

FREE WHEELING AND FULL SYNCHRONIZED SHIFT . . . SILENT SECOND SPEED . . . NEW SWITCH-KEY STARTING . . . 4-POINT CUSHIONED POWER

SPRING TESTER



The American Coil Spring Company has developed a new spring tester, which it calls the Pressure Squarometer, with test block. This is a direct reading production testing device, designed for detecting faulty construction of valve springs. The device is stated to exert uniform pressure or resultant force when confined to working position.

The manufacturer states that the tester enables spring makers to control design and production, this making valve springs having uniform pressure around the mean diameter of the ends of the spring while in operation. This, it is claimed, insures longer life for the spring and the entire valve assembly and more quiet operation of the springs.

Manufacturers lay emphasis on the squareness of springs in the free state. Little is said about the springs exerting uniform pressure concentric with the axis of the spring. The squareness of the spring under pressure is all important, a fact which will be recognized by automotive engineers.

JOHN N. WILLYS HAS DEFINITE PLAN TO PUT W-O IN PROFIT

(Continued from Page 1)

jectives will be to put the plant back on a larger production basis to enable additional employment.

"There will be no new labor-saving machinery purchased," he declared emphatically. "Instead," he added, "we will use man power and afford employment to the thousands who are greatly in need."

In discussing the future of the Willys Overland Company, Mr. Willys admitted that he has a gigantic task ahead of him, but declared the company is in better shape to stage a comeback at this time than it was during the trying days of 1921 when the company owed the banks $18,000,000.

"My plans for Willys Overland include great efforts for foreign business as well as domestic sales."

Mr. Willys said he would confer with other executives of Willys Overland the remainder of the week and then would make a tour of the automotive industrial centers to study conditions before delving into details and policies for the immediate future. Later, he said, he plans to personally contact Willys Overland dealer and distributor organizations and endeavor to pave the way for a greater market.

CINCINNATI ENJOINED ON MOTOR BUS FEES

Cincinnati, O., June 17.—Judge Alfred Mack, in a decision handed down in Common Pleas Court, held that the city's "so-called license fees" for motor buses are "in reality a tax levy for revenue purposes and not simply a sum which is raised sufficient to pay only the expense of administering the regulation, supervision and control of motor buses."

Judge Mack granted an injunction against the city of Cincinnati, preventing collection of the fees in a suit filed by the Cincinnati Street Railway Company.

MAJOR SPECIFICATIONS AND MECHANICAL DETAILS

Make and Model	Weight—5-P. Sedan	Wheel Base	Engine Make	Thermostat Used	Valve Arrangement	Cylinders	Bore and Stroke	Piston Disp.	Compression Ratio	Tax H. P.	Brake, H.P. and Peak R. P. M.	Plst. Make or Material	No. Main Br.	Oil Purifier	Fuel Cleaner	Carburetor	Air Cleaner
Auburn 8-100	3675	127-136	Lyc	Dole	L	8	3 x4¾	268.6	5.26	28.8	100@3400	*Alum	5	Pur	No	Str	AC
Auburn 12-160	4465	133	Lyc	Dole	HO	12	3⅛x4¼	391.1	5.50	46.8	160@3400	*Alum	4	Pur	Ste	Str	AC
Austin	§1150	75	Own	No	L	4	2.2x3	45.6	5.10	7.8	13@3000	Alum	2	No	No	Til	No
Buick 32-50	3450	114	Own	Bish-Bab	O	8	2⅞x4¼	230.4	4.65	27.61	78@3200	CI	5	AC	AC	Mar	AC
Buick 32-60	3980	118	Own	Bish-Bab	O	8	3⅛x4⅝	272.6	4.63	30.02	90@3000	CI	5	AC	AC	Mar	AC
Buick 32-80	4450	126	Own	Bish-Bab	O	8	3⅜x5	344.8	4.40	35.12	104@2900	CI	5	AC	AC	Mar	AC
Buick 32-90	4565	134	Own	Bish-Bab	O	8	3⅜x5	344.8	4.40	35.12	104@2900	CI	5	AC	AC	Mar	AC
Cadillac 355 B	4885	134-140	Own	Har	L	8	3⅜x4½	353.0	5.38	36.4	115@3000	CI	3	AC	AC	Own	AC
Cadillac 370 B	5175	134-140	Own	Har	O	12	3½x4	368.0	5.30	46.9	135@3400	CI	4	Cuno	AC	DL	AC
Cadillac 452 B	5625	143-149	Own	Har	O	16	3 x4	452.0	5.36	57.5	165@3400	CI	5	Cuno	AC	DL	AC
Chevrolet	2770	109	Own	No	O	6	3⅛x3¾	194	5.20	26.3	60@3000	CI	3	No	Yes	Car	AC
Chrysler 6	3120	116	§Own	Yes	L	6	3¼x4½	223.9	5.35	25.35	82@3400	*Alum	4	Pur	Yes	B & B	Yes
Chrysler 8	3860	125	§Own	Yes	L	8	3¼x4½	298.6	5.20	33.80	100@3400	*Alum	5	Pur	Yes	Str	Yes
Chrysler Imp. 8	——	135	§Own	Yes	L	8	3½x5	384.8	5.20	39.20	125@3200	*Alum	9	Pur	Yes	Str	Yes
Chrysler Imp. 8 cus.	——	146	§Own	Yes	L	8	3½x5	384.8	5.20	39.20	125@3200	*Alum	9	Pur	Yes	Str	Yes
Cord (Fr. Wh. D.)	4620	137½	Lyc	Dole	L	8	3¼x4½	298.6	5.25	33.8	115@3800	*Alum	5	Pur	AC	Sch	No
De Soto Six	3008	113	§Own	Yes	L	6	3¼x4¼	211.5	5.35	25.35	75@3400	*Alum	4	Pur	Yes	B & B	Yes
De Vaux 6-80	2810	114	Con	Dole	L	6	3⅜x4	214.7	5.20	27.34	75@3600	Alum	4	—	Yes	Til	AC
Dodge Six D L	3084	114¼	§Own	Yes	L	6	3¼x4⅜	217.7	5.35	25.35	79@3400	Alum	4	Pur	Yes	Car	Yes
Dodge Eight D K	3488	122	§Own	Yes	L	8	3¼x4¼	282.1	5.20	33.80	90@3400	Alum	5	Pur	Yes	Str	Yes
Essex-Gr. Su. 6 Std.	2870	113	†Own	No	L	6	2⅞x4¾	193.0	5.50	20.7	70@3200	Alum	3	No	Ste	Mar	AC
Ford A	2357	106	Own	No	L	4	3⅛x4¼	200.5	4.60	24.03	50@2600	Alum	3	—	—	Zen	—
Ford V8	†2447	106	Own	No	L	8	3⅛x3¾	220.0	5.50	30.0	65@3400	Alum	3	—	—	DL	—
Franklin Airman	——	132	*Own	Ful	O	6	3½x4¾	——	5.10	——	100@3100	*Alum	7	Pur	Yes	Str	Yes
Franklin V-12	——	144	*Own	Ful	O	12	3¼x4	398.0	5.12	——	150@3100	*Alum	7	Pur	Yes	Str	Yes
Graham 6 (1933)	——	118	Own	Yes	L	6	3¼x4½	224.0	6.50	25.35	80@3400	*Alum	7	No	AC	Sch	AC
Graham 6	3205	113	Own	Yes	L	6	3⅛x4½	207	5.45	23.4	70@3200	*Alum	7	No	AC	Sch	AC
Graham 8	3665	123	Own	Bish-Bab	L	8	3⅛x4	245.4	6.50	31.25	90@3400	*Alum	5	AC	AC	DL	AC
Hudson Gr. 8 Std.	3270	119-126-132	†Own	No	L	8	3 x4½	254.1	5.80	28.8	101@3600	Alum	5	No	Ste	Mar	AC
Hupmobile 216	3115	116	Own	Bish-Bab	L	6	3⅜x4¼	228.1	5.00	27.34	75@3200	*Alum	4	**	Ste	Str	AC
Hupmobile 222	3580	122	Own	Bish-Bab	L	8	2⅞x4⅝	250.7	5.40	27.61	93@3200	Alum	5	Pur	Ste	Str	AC
Hupmobile 226	3755	126	Own	Bish-Bab	L	8	3⅛x4¾	279.9	5.47	30.10	103@3200	Alum	5	Pur	Ste	Str	AC
La Salle 345 B	4840	130-136	Own	Har	L	8	3⅜x4½	353.0	5.38	36.4	115@3000	CI	3	AC	AC	Own	AC
Lincoln V-8	5430	136	Own	Yes	L	8	3½x5	384.0	5.23	39.2	125@2900	Alum	5	No	AC	Str	AC
Lincoln V-12	5750	145	Own	Yes	L	12	3¼x4½	448.0	5.25	50.7	150@3400	Alum	7	No	AC	Str	AC
Marmon 8	3500	125	Own	Yes	L	8	3¼x4¾	315.2	5.50	33.8	125@3400	Alum	5	Flo	AC	Str	AC
Marmon 16	5360	145	Own	Pines	O	16	3⅛x4	490.8	5.75	62.5	200@3400	Alum	5	†	AC	Str	AC
Nash Big Six	3200	116	Own	Bish-Bab	L	6	3⅛x4⅜	201.3	5.10	23.4	70@3000	*Alum	7	Pur	AC	Str	AC
Nash Stand. Eight	3400	121	Own	Bish-Bab	L	8	3 x4⅜	247.4	5.10	28.8	85@3200	*Alum	9	Pur	AC	Str	AC
Nash Spec. Eight	3870	128	Own	Bish-Bab	O	8	3⅛x4¼	260.8	5.25	31.2	100@3400	*Alum	9	Pur	AC	Str	AC
Nash Adv. Eight	4350	133	Own	Bish-Bab	O	8	3⅜x4½	322.0	5.25	36.4	125@3600	*Alum	9	Pur	AC	Str	AC
Nash Ambas. Eight	4510	142	Own	Bish-Bab	O	8	3⅜x4½	322.0	5.25	36.4	125@3600	*Alum	9	Pur	AC	Str	AC
Oldsmobile F-32	3035	116½	Own	No	L	6	3⅛x4⅛	213.3	5.80	26.3	74@3200	CI	4	AC	AC	Str	AC
Oldsmobile L-32	3165	116½	Own	No	L	8	3 x4¼	240.3	5.90	28.8	87@3350	CI	5	AC	AC	Str	AC
Packard Twin Six	5225	142-147	Own	Yes	L	12	3⅛x4	445.5	6.00	56.0	160@3200	*Alum	4	Yes	Yes	Own	AC
Packard Stan. 8	4570	130-137	Own	Yes	L	8	3⅜x5	320.0	6.00	32.5	110@3200	*Alum	9	Yes	Yes	Own	AC
Packard De L. 8	5045	142-147	Own	Yes	L	8	3½x5	384.8	6.00	39.2	135@3200	*Alum	9	Yes	Yes	Own	AC
Packard Light 8	4115	127¾	Own	Yes	L	8	3⅛x5	320.0	6.00	32.50	110@3200	*Alum	9	Yes	Yes	Own	AC
Pierce-Arrow 54	4819	137-142	Own	Pines	L	8	3⅛x4¾	366	5.05	39.2	125@3000	*Alum	9	Pur	Ste	Str	AC
Pierce-Arrow 52	5080	142-147	Own	Pines	L	12	3⅜x4	429	5.05	54.6	150@3200	*Alum	7	Pur	Ste	Str	AC
Pierce-Arrow 53	5395	137-142	Own	Pines	L	12	3¼x4	398	5.05	50.7	140@3200	*Alum	7	Pur	Ste	Str	AC
Plymouth	2875	112	§Own	No	L	4	3⅜x4¾	196.1	4.90	21.03	65@3200	Alum	3	Yes	AC	B & B	Yes
Pontiac 6	2870	114	Own	Yes	L	6	3⅛x3⅞	200.0	5.10	26.3	65@3200	CI	3	No	AC	Mar	Yes
Pontiac V-8	3225	117	Own	Yes	H	8	3⅛x3⅝	251.0	5.20	37.8	85@3200	CI	3	No	AC	Mar	Yes
Reo Fly. Cloud "S"	3405	117	Own	Yes	L	6	3⅛x5	230.0	5.30	23.4	80@3200	Lo-Ex	7	Yes	Yes	Zen	Yes
Reo Royale Cust.	4650	135	Own	Pines	L	8	3⅜x5	358	5.30	36.48	125@3300	Alum	9	Han	AC	Sch	Own
Reo Royale	4375	131	Own	Pines	L	8	3⅜x5	358	5.30	36.48	125@3300	Alum	9	Han	AC	Sch	Own
Reo 8-25	4050	125	Own	Yes	L	8	3 x4¾	268.6	5.37	28.8	90@3300	*Alum	5	Han	V S	Sch	Un
Rockne 6-65	2595	110	Own	Dole	L	6	3⅛x4⅛	189.8	5.00	23.4	66@3200	CI	4	No	AC	Str	No
Rockne 6-75	3000	114	Own	Dole	L	6	3¼x4⅛	205.3	5.00	25.4	72@3200	CI	4	Own	AC	Str	No
Studebaker 6-55	3170	117	Own	Dole	L	6	3¼x4⅝	230.0	5.00	25.4	80@3200	CI	4	No	Ste	Str	No
Studebaker Dict. 62	3240	117	Own	Bish-Bab	L	8	3⅛x3¾	221.0	5.00	30.0	85@3200	CI	9	Pur	Ste	Str	AC
Studebaker Com. 71	3545	125	Own	Bish-Bab	L	8	3⅛x4¼	250.4	5.20	30.0	101@3200	*Alum	9	Pur	Ste	Str	AC
Studebaker Pres. 91	4260	135	Own	Dole	L	8	3½x4⅜	337.0	5.10	39.2	122@3200	*Alum	9	Han	Ste	Str	AM
Stutz LAA	4383	127½	Own	No	O	6	3⅜x4½	241.5	5.50	27.3	85@3150	*Alum	7	Pur	AC	Zen	Un
Stutz SV-16	4885	134½-145	Own	No	O	8	3⅜x4½	322	5.50	36.4	113@3300	*Alum	9	Pur	AC	Zen	AM
Stutz DV 32	5281	134½-145	Own	Bish-Bab	O	8	3⅜x4½	322	5.10	36.4	156@3900	*Alum	9	Pur	Ste	Str	AC
Willys-Ov'land 6-90	2814	113	Own	Yes	L	6	3¼x3⅞	193.0	5.26	25.35	65@3400	CI	4	No	AC	Til	Til
Willys-Ov'land 8-88	3250	121	Own	Yes	L	8	3¼x4	245.4	5.26	31.25	80@3200	CI	5	No	AC	Til	AC
Willys-Knt. 66-D	3775	121	Own	Yes	K	6	3⅜x4¾	255.0	5.50	27.34	87@3200	*Alum	7	Pur	Til	Til	AC
Willys-Knight 95	3031	113	Own	Yes	K	6	2⅞x4⅜	177.9	5.55	20.70	60@3400	*Alum	7	Pur	AC	Til	AC

JUDGING SUPER-BALLOON TIRES

(Continued from Page 5)

15 and 12 pounds, required, respectively, 17.3, 16.4 and 15.6 seconds.

* * *

SHIMMY AND TRAMP

Shimmy and tramp, like the poor, are ever with us. We know more about all three than we did ten years ago. Shimmy and tramp converted the balloon tire into a medium-pressure tire and robbed us of the kind of ride we are now striving for in the super-balloon. Two years ago, super-balloons were tried on a number of cars, but front end instability caused them to be discarded before the sales departments became conscious of their eye and cushioning appeal. However, engineers are in a different mood today. They can do things they could not do two or ten years ago because they have to.

Every car on which supers have been tried has developed front-end nervousness; some quite a lot, others very little, but corrective measures, either by car engineer or some of our expert service station mechanics, have in every instance in my experience produced a remedy that quieted the tramp and shimmy and produced a reasonably acceptable ride at rather low air pressures. We could not have done this ten years ago, certainly.

* * *

Whenever a new method of attaching the tire to the wheel is devised, or when a large-section casing is proposed for use, the blowout bugaboo looms large in our imagination. Last year it was the drop-center rim; this year the super-balloon tire, which by some is considered dangerous for high-speed driving.

The chances of instantaneous tire blowouts under normal operating conditions are remote. A blowout or sudden explosion which produces a relatively large hole in the casing, results from an accidental jabbing or cutting of the tire by a sharp object or from an extremely violent blow by a hole or road obstacle that may rupture a casing badly weakened by long wear. Both causes are avoidable, yet when a sudden blowout occurs at high speed, upward of fifty miles per hour, serious consequences may result to an inexperienced driver, regardless of the type of the tire.

* * *

A few months of experience with super-balloon tires on automobiles is not sufficient to warrant conclusions that these tires are or are not more susceptible to punctures than balloon tires. A theory advanced in favor of the balloon tire in 1924, that the lower the air pressure is the less the tire is susceptible to punctures, still remains to be disproved. A nail or other puncturing object is held less likely to be started and driven into a low-pressure tire than into a medium or high-pressure tire. There may be some merit in this contention. I know of no series of tests that establish the facts.

The balloon tire covered more ground-contact area than its predecessor, the high-pressure tire, and should come into contact, therefore, with more puncturing objects during tire life; however, I believe that punctures have not increased with the use of balloon tires. The super-balloon will cover considerably more ground than the balloon did. I look for no increase in the puncture hazard with the super-balloon, but experience may establish some facts within a year to disprove this belief. Experience on our test cars thus far indicates a reduction of punctures with super-balloons.

* * *

Steering is inherently harder with the larger section low-pressure tires. Whenever a loaded wheel fitted with a pneumatic tire is turned on its vertical axis, all the flat part of the tire in contact with the road slides, except a small area in the center of road contact, and mathematically that area is a point. Pneumatic tires under load are flat at contact to a degree, depending on the stiffness of the carcass and on the load and inflation. As super-balloons have greater contact area than balloons, more steering force is required to twist them. But saying that large tires steer harder than small tires is not going to stop people from wanting a comfortable ride and an easy-handling car, even if we seem to have gone to the limit of our ingenuity and pocketbook in our efforts to solve the steering problem with present equipment.

(To Be Continued)

OPENS TIRE SHOWROOM

Englewood, N. J., June 17.—The Marron Tire Company has secured the agency in Englewood for Kelly Springfield tires. A modern showroom has been opened at 102 West Palisade Ave.

OF PRESENT AMERICAN PASSENGER CAR MODELS

Make and Model	Front End Drive	Ignition System	Gen. and Starter	Clutch	Transmission Make	Transmission Speeds	Transmission Type	Universals	Rear Axle	Ratio	Brakes	Steering Gear	Springs Rear	Spring Shackles	Chassis Lubric.	Tires
Auburn 8-100	Chain	Del-R	*Del-R-S	Long	D	3	SM-LGS-F	U	Col	*4.70	M	Ross	S 56¾	Own	Bijur	*17x5.50
Auburn 12-160	Link	Del-R	*Del-R-S	Long	D	3	SM-LGS-F	M	Col ½	*4.08	Bendix	Ross	S 56¾	Own	Bijur	*17x6.00
Austin	Gear	Aut-L	*Aut-L	Rock	WG	3	—	S	Sal ½	5.25	M	Say-B	Cant	Own	Al-Z	18x3.75
Buick 32-50	Tex	Del-R	Del-R	*Own	O	3	SM-BW-F	O	Own ½	4.60	Own	Sag	S 56	Tryon	Al-Z	18x5 50
Buick 32-60	Tex	Del-R	Del-R	*Own	O	3	SM-BW-F	O	Own ¾	4.54	Own	Sag	S 55¼	Own	Al-Z	18x6.00
Buick 32-80	Tex	Del-R	Del-R	*Own	O	3	SM-BW-F	O	Own ¾	4.27	Own	Sag	S 58⅞	Own	Al-Z	18x7 00
Buick 32-90	Tex	Del-R	Del-R	*Own	O	3	SM-BW-F	O	Own ¾	4.27	Own	Sag	S 58⅞	Own	Al-Z	18x7.00
Cadillac 355 E	Morse	Del-R	Del-R	Own	O	3	SM	S	Own ¾	4.80	Own M	Sag	S 58	Own	Alem	17x7 00
Cadillac 370 B	Morse	Del-R	Del-R	Own	O	3	SM	S	Ovn ¾	4.80	Own M	Sag	S 58	Own	Alem	17x7.00
Cadillac 452 B	Morse	Del-R	Del-R	Own	O	3	SM	S	Own ¾	4.64	Own M	Sag	S 60	Own	Alem	18x7.50
Chevrolet	Gear	Del-R	*Del-R	Own	O	3	SM-F	—	Own ½	4.10	M	Own	S 54	Own	Alem	18x5.25
Chrysler 6	Chain	Del-R	Del-R	*—	O	3	— F	—	Own ½	4.60	H	Own	S 53⅞	—	Alem	18x5.50
Chrysler 8	Chain	Del-R	Del-R	*—	O	4	— F	—	Own ½	4.30	H	Gem	S 54⅝	—	Alem	17x6.50
Chrysler Imp. 8	Chain	Del-R	Del-R	*—	O	4	— F	—	Own ½	4.10	H	Gem	S 57½	—	Al-Z	17x7.00
Chrysler Imp. 8 Cus.	Chain	Del-R	Del-R	*—	O	4	— F	—	Own ½	4.10	H	Gem	S 57½	—	Al-Z	17x7.50
Cord (Fr. Wh. Dr.)	Link	Del-R	*Del-R	Long	D	3	—	*	Col F	4.80	H	Gem	S 62	Own	Bijur	18x7.00
De Soto Six	Chain	Del-R	Del-R	*Own	O	3	O-F	—	Own ½	4.62	H	Own	S 53⅜	—	Alem	18x5.25
De Vaux 6-80	Morse	Aut-L	*Aut-L	Borg	W	3	—	S	‡AD ½	4.40	M	†W	S 54¼	Tryon	Al-Z	19x5.25
Dodge Six D L	Chain	Del-R	—	—	O	3	— F	—	Own ½	4.60	H	Own	S 54⅞	—	Al-Z	18x5 50
Dodge Eight D K	Chain	Del-R	Del-R	*—	O	3	— F	—	Own ½	4.10	H	Gem	S 55	—	Al-Z	18x6.00
Essex Gr. Su. 6	Morse	Aut-L	*Aut-L-S	*Own	O	3	SM-WG-F	S	Own ½	4.63	Bendix	Gem	S 54⅛	Own	Alem	18x5.25
Ford A	Var-G	Own	*Own	Own	O	3	SM	O	Own ¾	4.11	M	Gem	S-Tr 39	Own	Al-Z	18x5.25
Ford V8	Var-G	Own	*Own	Own	O	3	SM	O	Own ¾	4.11	M	Gem	S-Tr	Own	Al-Z	18x5.25
Franklin Airman	Chain	Del-R	*Del-R-S	—	W	3	SM-BW-F	M	— ¼	4.73	H	Gem	El 42	—	Al-Z	19x6.50
Franklin V-12	Chain	Del-R	*Del-R-S	Long	W	3	SM-BW-F	M	Col ½	4.45	H	Ross	S 60	Fafnir	Al-Z	17x7.50
Graham 6 (1933)	Link	Del-R	Del-R	*Long	WG	3	SM	U	Sal ½	4.55	H	Ross	S 54	ERS	Al-Z	17x6.00
Graham 6	Link	Del-R	Del-R	Long	WG	3	WG-F	U	Sal ½	4.45	H	Ross	S 54	ERS	Al-Z	17x5 50
Graham 8	Link	Del-R	Del-R	Long	WG	3	SM-WG-F	S	Sal ½	4.30	H	Ross	S 54	ERS	Al-Z	17x6.00
Hudson Greater 8	Morse	Aut-L	*Aut-L-S	*Own	O	3	SM-WG-F	S	Own ½	†4.63	Bendix	Gem	S 54⅛	Own	Alem	*17x6.00
Hupmobile 216	Chain	Aut-L	*A-L-S-§	Borg	WG	3	SM-WG-F	M	Spic ½	4.54	M	Ross	S 53	Tryon	Al-Z	18x5 50
Hupmobile 222	Morse	Aut-L	*A-L-S-§	Borg	WG	3	SM-WG-F	U	Own ½	4.36	M	Gem	S 57½	Rub-B	Al-Z	17x6.00
Hupmobile 226	More	Aut-L	*A-L-S-§	Long	D	3	SM-DG-F	U	Own ½	4.36	M	Gem	S 57½	Rub-B	Al-Z	17x6.50
La Salle 345 B	Morse	Del-R	Del-R	Own	O	3	SM	S	Own ¾	4.60	Own M	Sag	S 58	Own	Alem	17x7.00
Lincoln V-8	Chain	Aut-L	*Aut-L	Long	O	3	SM-F	S	Own F	4.58	*Bendix	Own	S 62	Own	Alem	18x7.00
Lincoln V-12	Chain	Aut-L	*Aut-L	Long	O	3	SM-F	S	Own F	4.58	*Bendix	Own	S 62	Own	Alem	18x7.50
Marmon 8	Diam	Del-R	*Del-R	*—	D	3	SM	S	Spic ½	4.08	Bendix	Ross	S 57	Tryon	Alem	18x6.00
Marmon 16	Diam	Del-R	Del-R	Rus	M	3	SM	S	Spic ½	3.78	Bendix	Ross	S 59½	**	Alem	18x7.00
Nash Big Six	Chain	Aut-L	*A-L-S-§	Borg	O	3	SM-DG-F	O	Own ½	4.70	M	Ross	S 54	ERS	Alem	18x5.25
Nash Stand. Eight	Chain	Aut-L	*A-L-S-§	Borg	O	3	SM-DG-F	O	Own ½	4.44	M	Ross	S 54	ERS	Alem	18x5.50
Nash Spec. Eight	Chain	*Aut-L	*A-L-S-§	Borg	O	3	SM-DG-F	O	Own ½	4.43	Bendix	Gem	S 55¾	*	Bijur	17x6.50
Nash Adv. Eight	Chain	*Aut-L	*A-L-S-§	Borg	O	3	SM-DG-F	O	Own ½	4.50	Bendix	Gem	S 57⅛	*	Bijur	18x7.00
Nash Ambas. Eight	Chain	*Aut-L	*A-L-S-§	Borg	O	3	SM-DG-F	O	Own ½	4.50	Bendix	Gem	S 57⅛	*	Bijur	18x7.00
Oldsmobile F-32	Chain	Del-R	Del-R	Borg	M	3	SM-BW-F	S	Own ½	4.56	Bendix	Sag	S 54½	Tryon	Al-Z	17x6.00
Oldsmobile L-32	Chain	Del-R	Del-R	Borg	M	3	SM-BW-F	S	Own ½	4.77	Bendix	Sag	S 54½	Tryon	Al-Z	17x6.00
Packard Twin Six	Morse	Aut-L	*Dyn	*Long	O	3	SM	M	Own ½	4.69	M	Own	S 60½	Own	Bijur	18x7.50
Packard Stan. 8	Morse	N E	*Dyn	Long	O	3	SM	M	Own ½	4.66	M	Own	S 60½	Own	Bijur	6.50x19
Packard De L. 8	Morse	N E	*Dyn	Long	O	3	SM	M	Own ½	4.66	M	Own	S 60½	Owr	Bijur	7.00x19
Packard Light 8	Morse	N E	*Dyn	*Long	O	3	SM	S	Own ½	4.66	M	Own	S 56	Own	Alem	17x6.50
Pierce-Arrow 54	Chain	Del-R	*Del-R-S	Long	O	3	SM-F	S	Own ½	4.42	Bendix	Ross	S 61	Faf	Myers	18x6.50
Pierce-Arrow 52	Chain	Del-R	*Del-R-S	Long	O	3	SM-F	S	Own ½	4.42	Bendix	Ross	S 61	Faf	Myers	18x7.00
Pierce-Arrow 53	Chain	Del-R	*Del-R-S	Long	O	3	SM-F	S	Own ½	4.58	Bendix	Ross	S 61	Faf	Myers	18x7 00
Plymouth	Var	Del-R	Del-R	*Own	O	3	O-F	O	Own ½	4.33	H	Own	S 53⅜	—	Al-Z	18x5.25
Pontiac 6	Chain	Del-R	Del-R	Own	M	3	SM-BW-F	M	Own ½	4.55	Bendix	Sag	S 54	Inlox	Al-Z	18x5.25
Pontiac V-8	Link	Del-R	Del-R	Own	M	3	SM-BW-F	M	Own ½	4.22	Bendix	Sag	S 54½	Inlox	Al-Z	17x6.00
Reo Fly. Cloud "S"	Chain	Del-R	*Del-R-S	Long	O	3	SM-F	S	Own ½	4.60	H	Ross	S 55	Tryon	AL-Z	17x5.50
Reo Royale Cust.	Morse	Del-R	Del-R-§	Long	O	3	SHG	U	Own ½	4.07	H	Ross	S 57½	Own	Far	6.50x18
Reo Royale	Morse	Del-R	Del-R-§	Long	O	3	SHG	U	Own ½	4.07	H	Ross	S 57½	Own	Al-Z	6.50x18
Reo 8-25	Link	Del-R	*Del-R	Long	O	3	SHG	U	Own ½	4.90	H	Ross	S 55¾	Own	Al-Z	17x6.50
Rockne 6-65	Morse	Aut-L	*Aut-L-S	Borg	WG	3	SM-BW-F	M	Spic ½	4.55	Bendix	Ross	S 54	Tryon	Al-Z	18x5.25
Rockne 6-75	Chain	Aut-L	*Aut-L-S	Long	WG	3	SM-BW-F	M	Own ½	4.73	Bendix	Ross	S 54	Tryon	Al-Z	18x5.50
Studebaker 6-55	Chain	Del-R	*Del-R-S	Long	O	3	SM-BW-F	S	Own ½	4.27	Bendix	Ross	S 54	Tryon	Alem	18x5.50
Studebaker Dict. 62	Cel	Del-R	*Del-R-S	Long	O	3	SM-BW-F	S	Own ½	4.73	Bendix	Ross	S 54	Tryon	Alem	18x5.50
Studebaker Com. 71	Cel	Del-R	*Del-R-S	Long	O	3	SM-BW-F	S	Own ½	4.73	Bendix	Ross	S 56	Faf	Alem	18x6.00
Studebaker Pres. 91	Var-G	Del-R	*Del-R-S	Borg	O	3	SM-BW-F	S	Own ½	4.31	Bendix	Ross	S 60	Faf	Alem	18x6.50
Stutz LAA	Link	Del-R	Del-R	Borg	D	4	—	U	Sal ½	5.10	H	Gem	S 60	Own	Bijur	19x6.50
Stutz SV-16	Link	Del-R	Del-R	Long	M	3	SM	M	Tim ½	4.75	H	Gem	S 62¾	Own	Bijur	18x7.00
Stutz DV-32	Link	Del-R	Del-R	Long	M	3	SM	M	Tim ½	4.50	H	Gem	S 62¾	Own	Bijur	18x7.00
Willys-Ov'land 6-90	Link	Aut-L	*Aut-L	Own	O	3	O-F	S	Own ½	4.60	Bendix	Own	S 51	Tryon	Alem	18x5.25
Willys-Ov'land 8-88	Link	Aut-L	*Aut-L	Borg	O	3	O-F	S	Own ½	4.40	Bendix	Ross	S 56	Tryon	Alem	18x5.50
Willys-Knl. 66-D	Link	Aut-L	*Aut-L	Rock	O	3	O-F	S	Own ½	4.18	Bendix	Ross	S 56	Tryon	Alem	17x6.00
Willys-Knight 95	Link	Aut-L	*Aut-L	Own	O	3	O-F	S	Own ½	4.89	Bendix	Gem	S 51	Tryon	Alem	18x5.50

KEY TO ABBREVATIONS

Weight — ‡Austin standard 2 passenger coupe. Stutz DV 145-inch wheel base weighs 5,352. †Tudor sedan.

Engine Make—Con. Continental; Lyc, Lycoming. *Air-cooled with spot temperature control. †Thermo syphon water circulation. ‡Floating power.

Thermostat—Bish-Bab, Bishop & Babcock, Dole, Dole Valve Co., Chicago, Ill.; Ful, Fulton Co.; Har, Harrison; Pines, Pines Winterfront Var, various makes.

Valve Arrangement—L, L head; H, horizontal O, overhead; K sleeve valve LV V-type L head. HO, Horizontal Opposed.

Piston Material—*Alum, aluminum with invar struts Alum, aluminum alloy Cl, cast iron; S, St, semi-steel; Lo-Ex, Aluminum Corporation of America.

Oil Purifier—Wal, Wall; Han, Handy; AC, AC Spark Plug Company; Ste, Stewart-Warner; Ski, Skinner; Flo, Floato; Cuno, Cuno Engineering Corp; Pur, Purolator. *Using both Floato and Skinner. †Using AC with Floato attachment. **Using both AC and Purolator.

Fuel Cleaner—AC, AC Spark Plug Co.; Gas, Gascolator; Ste, Stewart-Warner; Til, Tillotson; V-S, Van Sicklen.

Carburetor—Sch, Wheeler Schebler; Zen, Zenith; Mar, Marvel; Car, Carter; Str, Stromberg; DL, Detroit Lubricator; Til, Tillotson; B&B, Ball & Ball.

Air Cleaner—AC, AC Spark Plug Company; AM, Air Maze; Un, United; Til, Tillotson.

Front End Drive—Link, Link Belt; Tex, Texolite; Cel, Celeron; Diam, Diamond Chain; Morse, Morse Chain Company; Var, various makes of chains; Var-G various makes of gears.

Ignition, Generator and Starter—Aut-L, Auto-Lite; A-L, Auto-Lite; Del-R, Delco-Remy; Dyn, Owen-Dyneto Corp.; N E, North East. *Nash.—Indicates twin ignition. *Bendix starter used. S—Startix equipped. ‡Startix optional equipment.

Clutch—Borg, Borg & Beck; Br-L, Brown-Lipe; Rock, Rockford Machine; Long Long Clutch Company; Rus, Russell Mfg. Co. *Bendix Clutch Control.

Transmission Make—D, Detroit Gear; WG Warner Gear Company; M, Muncie Gear Company; O, Own; N, New Process Gear Corp.; W, Warner Corp. *Franklin Transcontinent models are equipped with both Warner and Detroit 3 or 4 speed gear sets, according to body type.

Transmission Type—DG, Detroit Gear & Machine Co.; LGS, The LGS Corp.; F Free Wheeling; SM, Synchro Mesh; BW Borg-Warner; NP—New Process Gear Corp.; WG, Warner Gear Co.; SHG, Synchronized Herringbone Gear.

Universals—U, Detroit Universal Products; S, Spicer Mfg. Corp.; O, Own, M, Mechanics Universal Joint Company. *Cord using Detroit Universal Products and Mechanical Universal Joint Co.

Rear Ax'e—Col Columbia; Sal, Salisbury; Spic, Spicer Mfg. Corp.; Tim, Timken; N.P., New Process Gear Corp.; ½, Semi-floating; ¾, ¾ floating; F, Full floating; ‡Adams used on custom models.

Ratio—*Dual ratio optional; Hudson 132-in. wheel base models have rear axle ratio of 5.10.

Brakes—H, hydraulic; M, mechanical; Bendix, Bendix Brake Corp. *Equipped with Vacuum Booster.

Steering Gear—Gem, Gemmer; Ross, Ross Gear and Tool Company; Sag, Saginaw Say-B Saylor-Beall Manufacturing Company; War, Warner; N.P., New Process Gear Corp. †Ross used on custom models.

Rear Springs — S, semi-elliptic; El, full elliptic; Cant, semi-cantilever; S-Tr semi-transverse.

Spring Shackles—Tryon, Willys-Morrow Company; Rub B, Rubber Shock Insulator Company; Faf, Fafnir Bearing Company; ERS, Eaton Products, Inc.; Inlox—Inland Mfg. Co.; *Tryon, front, ERS, rear. *Own, front, ERS, rear. **Using both Rubber-B and Fafnir.

Chassis Lubricator—Alem, Alemite; Al-Z, Alemite Zerk; Bijur, Bijur Lubricating Corp.; Far, Farval. Myers—Chassis Lubricating Co.

Tires—Auburn 8 custom models equipped with 17x6.00. *Hudson 122-in. wheel base models equipped with tires 17x6.50. Stutz 145-inch wheelbase models have 20x7.00 tires

DECLARES INSURANCE BILL PASSED IN MASS. PROTECTION TO PUBLIC

Boston, Mass., June 17.—Roused by charges against the bill passed in the final hours of the Legislature to compel payment of property damages within sixty days after the judgment on the penalty of having the driving license revoked, Senator James G. Moran of Mansfield, who filed the measure, asserted today that it was in the interest of public protection.

The committee on bills in third reading, acording to Senator Moran, made the addition to the measure which drew the fire of Frank A. Goodwin and which provides for compulsory payment of damages or loss of license. This section made the bill inapplicable in any case where the registrar is satisfied that the defendant was at the time any injury occurred insured for $1,000.

"I deny that the bill is an insurance company bill," Senator Moran said. "No one was interested in the legislation except myself and I have nothing to do with insurance companies. I introduced the bill because I was tired of hearing of these cases where persons had their cars damaged and got nothing but nose-thumbing."

BUICK HEADQUARTERS IN INDIANAPOLIS MOVED

Indianapolis, Ind., June 17.—Removal of headquarters of the Indianapolis Buick Company to 1302 East Washington St. is announced by L. C. LeMieux, general manager. The change was due in part to the reorganization of the Buick-Olds-Pontiac division of General Motors.

The Indianapolis company had previously occupied offices and showrooms in the Buick zone building at 1302 North Meridian St., but with the change in sales plans the showrooms were taken over for the display of all three lines of cars.

WILL ERECT GARAGE

Buffalo, June 17.—Gaylord L. Norton of Elba, Buffalo suburb, has purchased a site adjoining the West Shore Railroad station in that city and will erect a new business block, which he will occupy with an accessory store and public garage business.

Notice

Please see the fifth column to the left, giving steering gear information. Notice the outstanding Ross predominance. This preference for Ross exists not only in the passenger car field, but in the truck and bus field and other divisions of the automotive industry as well. Passenger car figures are:

ROSS

26

★

FIRST Competitor

19

★

SECOND Competitor

12

★

THIRD Competitor

1

★

Build Their Own

12

ROSS

CAM AND LEVER STEERING

Roller Mounted

★

206

Engineering Staffs Prefer Ross

1933 Graham 6 Has Many Interesting New Features

(Continued from Page 1)

to give high compression, but at the same time permit the use of ordinary gasoline. The compression ratio of the engine is 6.5 to 1.

Lubrication is by pressure, the oil being carried at fifty pounds from the gear pump through a large capacity gallery to all main bearings. The crank shaft is drilled to all connecting-rod bearings, and oil is fed through large tubes and drilled passages directly to the valve lifters. A crank-case ventilator is used.

The clutch used on this new Graham is a large single-plate unit, with a light steel-driven member, dished to give gradual engagement, and fitted with a spring-type dampener. The clutch has a ball-type throw-out bearing, and lubrication is by means of nipples easily accessible under the hood.

The automatic free-wheeling feature is provided by means of a power-operated clutch throw-out mechanism, which is automatic in action and accomplished by utilization of the engine vacuum. This mechanism eliminates manual operation of the clutch pedal when shifting gears and permits the car to free wheel when its motive force exceeds that of the engine.

Operation of the clutch throw-out mechanism is governed by the foot throttle. Release of pressure on the accelerator pedal disengages the clutch to permit free wheeling or gear shifting and application of pressure on the pedal engages it again.

A push-pull button located on the instrument board and connected to the valve in the vacuum line of the clutch-operating mechanism permits the driver to cut out automatic action and free wheeling and to restore it as he desires. It is not necessary to depress the clutch pedal when starting or backing the car or when shifting between the various speed selections.

The transmission of this new Graham gives silent gear shifting and driving in second and third speeds. This is obtained by the use of gear synchronizers and helical gears.

The propeller shaft is made of welded steel tubing and is fitted with two universal joints.

The rear axle is a semi-floating unit with spiral bevel gear drive and a ratio of 4.55 to 1. The frame is a banjo-type similar to that of the Graham eight.

The brakes are hydraulic, with centrifuse drums. The drums have a 13-inch diameter and 326 square inches of braking surface.

The steering gear is a roller cam and lever unit, with ball-thrust bearings on the shaft and a taper roller bearing on the lever stud. This gear has a variable ratio with its maximum at 17 to 1.

There follow the specifications of this new Graham boiled down for ready reference:

ENGINE — Graham six-cylinder, bore 3¼ inches, stroke 4½ inches, 80-brake horse power, seven-bearing crank shaft, aluminum alloy, invar strut, pistons, 5-point suspension, all mountings rubber cushioned, composite aluminum cylinder head to give high-compression performance with standard fuel.

LUBRICATION — Engine: Pressure to all main connecting rod and cam-shaft bearings, valve tappets and timing chain, large screen oil strainer, crank case ventilation. Chassis: High-pressure oil gun.

COOLING—Flat tube and fin radiator, water circulated by chain-driven pump, cylinders water-jacketed full length of bores, engine thermostat.

FUEL SYSTEM—Carburetor 1¼ inches, with accelerating pump and economizer; cam-shaft driven fuel pump, fuel filter, dash-regulated heat control, gasoline feed line insulated against engine heat, 18-gallon fuel tank.

ELECTRICAL SYSTEM — Delco Remy, full automatic spark advance, manual engagement for starting motor, generator driven by chain, independent drive distributor.

POWER-OPERATED CLUTCH—Automatic free wheeling, single dry-plate type, vacuum operated, automatically releases and engages with closing and opening of foot throttle, locks in or out of free wheeling, driven member dished and spring cushioned.

TRANSMISSION—Synchro-silent, three speeds forward and one reverse, spiral constant mesh gears and synchronizer.

REAR AXLE — Semi - floating, spiral bevel drive, 4.55 to 1 ratio, taper roller bearings throughout, 61-inch wheel track.

FRONT AXLE — Reverse Elliott type, ball-thrust bearings in steering pivots, 61-inch wheel track.

SPRINGS — Semi-elliptic front and rear; front, 36 inches long and 2 inches wide, shackled at front end; rear, 54 inches long and 2 wide; outboard hangers, all spring eye and shackle bolts cushioned in rubber.

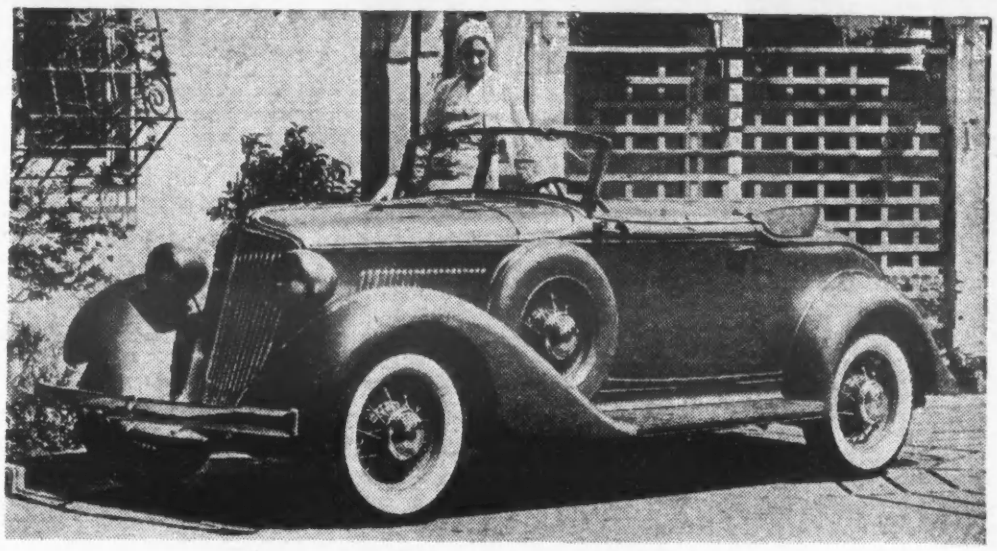
FRAME—Banjo side rails, six cross members, two center cross members support steel running boards.

STEERING GEAR—Roller cam and lever-type, ball-thrust bearings, taper roller bearing on lever stud, 18-inch steering wheel, kick shackle at rear of left front spring.

BRAKES — Service: Hydraulic, with 13-inch centrifuse drums, rigid type shoes, parking brake on propeller shaft.

WHEEL AND TIRES—Five demountable wood or wire 17x6 tires.

STANDARD EQUIPMENT—Rear view mirror, windshield wiper, two cowl ventilators, steering and ignition lock, hydrostatic fuel gauge water temperature indicator, combination stop and tail lamp, lamp for steering and ignition lock. Sedan has two corner lamps, assist toggles, robe rail, foot rest, one curtain, smoking case, two interior visors.



1933 Graham Six Convertible Coupe.

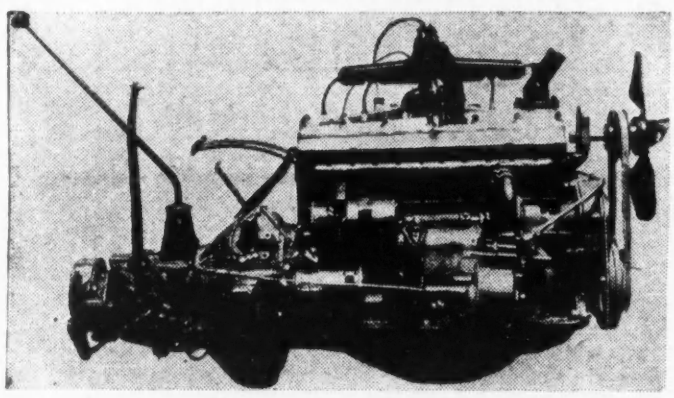
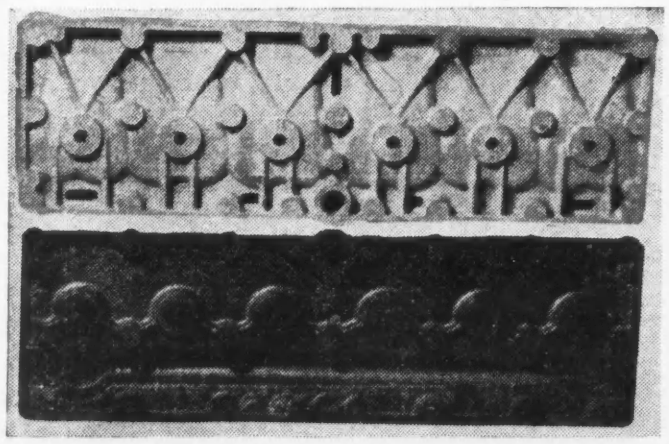


Photo shows the composite aluminum cylinder head and the automatic clutch-control mechanism. The main cylinder of the automatic clutch control is bracketed on the wide flange at the bottom of the crank case, and connected by cable to a short lever mounted on the extended clutch-pedal shaft. Above the vacuum cylinder are the automatic and the manual control valves, from which a copper vacuum tube runs around the front of the engine to the inlet manifold.



Graham Six cylinder head in two parts, aluminum alloy and cast iron

BRAKE LINING PROBLEMS

(Continued from Page 5)

years, and with the cast-iron-type drum it is entirely feasible to eliminate the major criticisms brought against fabric linings when used with low-carbon pressed-steel drums. As the development of all three types of linings proceeds, it may be found that the metallic fabric construction presents structural strength, giving extreme durability.

In looking at the horizon it is apparent that the design of brakes will undergo a radical change, especially for the heavier cars, due to the smaller size of rims required by coming developments in tires, which may limit drum diameters to thirteen inch or, at the most, fifteen inch. If such a trend in design is coming for the larger cars, may not ten-inch-diameter drums, or less, be applied to the lighter cars, possibly for economic reasons solely? With these smaller diameter brakes, power or booster operation may be desirable, if not a necessity.

The brake lining manufacturers can only look forward to appreciably increased demands for material which may withstand extremely high unit pressures with marked increase in durability. The possibility of an appreciable increase in car weight per unit of lining area with the smaller brake is very apparent, or at least this would be desirable from a brake design viewpoint, rather than the use of extra wide brakes.

From the foregoing, it may be noted that the brake lining industry has ever increasing demands placed upon their research, to which a new phase has been added in the last few years, namely, very active brake drum research. With all this activity in research, improved products may be expected from both industries, leading to the maximum of brake performance under all conditions of service.

DE COSTA OPERATING THE YOUNG-FEDERAL CO.

Worcester, Mass., June 17.—Joseph B. De Costa is now operating the Young-Federal Company of this city, located at 305 Shrewsbury St., distributor of Fegeral trucks and Norwalk tires. Mr. De Costa was formerly with the Autocar Company and White Company, both of Boston, and with the Fitz-John Bus Body Company of Muskegon, Mich.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

The Home Hotel of New York

Homelike in service, appointments and location . . . away from noise and congestion, yet but a few minutes from Times Square . . . garage facilities for tourists.

Home folks will like this hotel

HOTEL
BRETTON HALL
BROADWAY at 86th STREET
NEW YORK

Costs at the Lexington are geared to 1932

Next time you come to New York, register at The Lexington. Only a block from Park Avenue, and less than five minutes walk to the Grand Central station. Quiet, comfort, convenience, economy.

Restaurant prices have been revised...breakfast now 50c, luncheon 65c and dinner $1.00.

* * *

Room Rates as low as $3

Room rates: for one person...$3, $4, $5 and $6.
For two persons only $1 extra. Parlor suites $10.

HOTEL LEXINGTON
LEXINGTON AVE. AT 48TH ST., NEW YORK CITY
Located in the Grand Central Zone · Charles E. Rochester, General Manager